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## ABSTRACT

This review was originally intended: (1) to constitute one of the background documents for the workshop on "Issues and Practices in Planning the Quality of Education"; and (2) to be used in a modified and more elaborate form as an orientation and training document for IIEP courses and seminars organized on the subject. The review consists of four different parts. Part I, entitled "Conceptual Distinctions in the Discourse on the Quality of Education," is devoted to definitions of the notion of quality of education and some related concepts; it also studies at some length three particularly important issues: (1) expansion and educational standards; (2) the relevance issue and the evolution of curricula; and (3) quality and equity. The second part, "Quality of Education in Some Development Plans," analyzes how the treatment of quality issues has evolved over the years in a few selected developing countries. The core of the document, contained in part III entitled "What Does Research Have To Say?" reviews research studies, undertaken in developing countries, that focus specifically on: (1) the methodology or approaches used; and (2) the findings reported. Finally, part IV examines the utility and practicability of various information tools for quality improvement and concludes with a discussion on decentralized mechanisms for monitoring the quality of education. (111 references) (Author)

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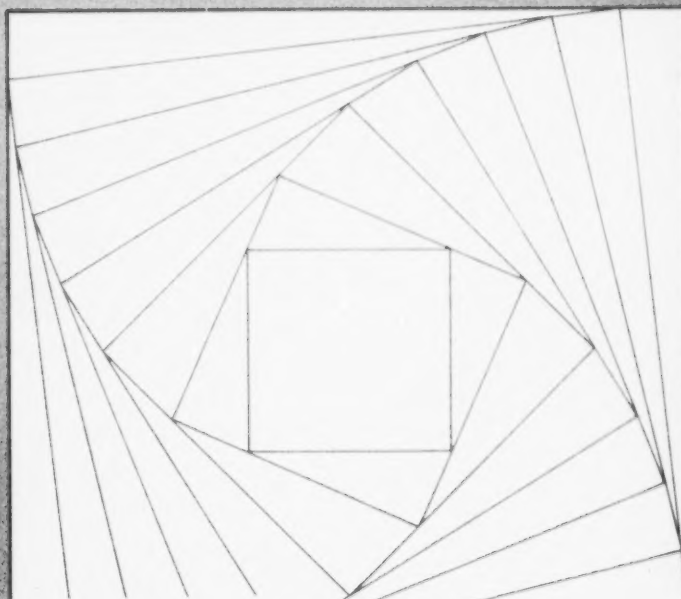
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Issues and methodologies in educational development:  
an IIEP series for orientation and training

# The quality of education in developing countries: a review of some research studies and policy documents

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International Institute for Educational Planning  
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## Preamble

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The review consists of four different parts. Part I entitled "Conceptual distinctions in the discourse on the quality of education" is devoted to definitions of the notion of quality of education and some related concepts; it also studies at some length three particularly important issues: (i) expansion and educational standards; (ii) the relevance issue and the evolution of curricula; (iii) quality and equity. The second part, "Quality of education in some development plans", analyses how the treatment of quality issues has evolved over the years in a few selected developing countries. The core of the document, contained in Part III entitled "What does research have to say?", reviews a certain number of research studies undertaken in developing countries which focus specifically on (i) the methodology or approaches used and (ii) the findings reported. Finally Part IV examines the utility and practicability of various information tools for quality improvement and concludes with a discussion on decentralized mechanisms for monitoring the quality of education.

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1. For the outcomes of the workshop (which took place at the IIEP in Paris from 13 to 17 November 1989), see Ross, K.N. ; Mählick, L. (1990) (Eds.) *Planning the quality of education: the collection and use of data for informed decision-making*, IIEP, Paris.

## Part I

### Conceptual distinctions in the discourse on quality of education

## 1.1 Introduction: meanings and definitions of quality of education

Expansion of an educational system is invariably marked by concerns of 'quality decline'. This was true, for instance, of the unprecedented growth of educational systems in practically all developing countries in the 1960s and 1970s. Similarly, the current situation of stagnant or declining enrolments in several developing countries, once again brings the issue of improving educational quality to the forefront.

Public debate on the quality of education usually concentrates on a small number of issues, the most frequent of which is the students' level of achievement. People, who themselves benefitted from a school education, tend to believe that 'today's children are doing worse than in our time'. They compare today's student levels in mathematics, geography, etc. to what they feel their own generation learnt in school. Many parents are also highly aware of differences existing between schools and therefore, when choosing a particular school for their children (if such a choice is feasible), look closely at the past achievement of the school's students in terms of examination results. In both cases it is the *excellence* of student learning that interests people most. Another dimension concerning the quality of outcomes is the *relevance* of the knowledge, skills and attitudes students acquire for life after school. This does not only refer to work and employment, but also to the insertion of young people into the cultural, social and political contexts of the society which surrounds them. The *conditions of learning* are frequently raised in the quality debate: an insufficient supply of qualified teachers to cope with the increased number of enrolments; inadequate building facilities, etc.

Literature on the quality of education often covers very broad concepts. Under the quality of education umbrella term may be included: content and methods of teaching, management of the educational process, what the students learn and who the learners are, as well as attempts to adapt education to changing needs through innovation (Coombs 1969). Mialaret's (1985) general definition emphasizes that the quality of education is reflected in the fit between, on the one hand, the expectations of society expressed in the general and specific objectives of education, and, on the other, the actual characteristics of the educational process and the changes observed at the student level.

From what has been discussed above, it appears that the general concept of educational quality is complex and *multidimensional*. For the purpose of this document, evaluating the quality of the educational system as a whole, or a part of that system (i.e. a programme in a given grade, a school, etc.) entails analyzing first and foremost:

- (a) the extent to which the *products or results* of the education provided (i.e. the knowledge, skills and values acquired by the students), meet the *standards stipulated* in the system's *educational objectives*<sup>1</sup> and

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1. The basic assumption here is that the aspirations and expectations of a given society are reflected in the general and specific objectives of its educational system. However, we cannot assume that public opinion is unanimous about the official objectives rather that (in the best of cases) these constitute a compromise between the requests of various groups of society i.e. parents, students, teachers, employers, etc. This usually means that the official objectives adopted are so general that further specifications are needed in order to assess the extent to which they have been achieved.

- (b) the extent to which the knowledge, skills and values acquired are *relevant* to human and environmental conditions and needs.

But the notion of quality cannot be limited to student results alone; it should also take into account their determinants (especially if the ambition is to improve quality), i.e. the various *means* such as the provision of teachers, buildings, equipment, curriculum, textbooks and the teaching-learning process, etc. In conclusion, the general concept of quality of education is composed of three interrelated dimensions: the quality of human and material resources available for teaching (inputs), the quality of teaching practices (process) and the quality of the results (outputs and outcomes). Furthermore, any analysis of the quality of education should include the question: quality for whom? Should the efforts concentrate on students from underprivileged groups, the most able, or all students of the system? (For a further discussion, see Section 1.5 and 1.7 of this book, Hallak, 1978 and OECD, 1989).

## 1.2 Educational standards

The Concise Oxford Dictionary gives two meanings to the word *standard* : "(1) criterion of comparison; (2) degree of excellence required to achieve a specific aim".

The philosophy or ideology of a government will implicitly or explicitly determine goals and specify standards for different aspects of education, although naturally each one will differ in the relative emphasis it places on cognitive as compared to affective achievement and social skills. Much of the confusion in the debate on the decline of educational quality stems from the common belief that there exists a set of universal and eternal criteria for judging the achievement/performance of pupils, schools or the entire educational system. But, since the conditions and needs vary from one country to another, and knowledge and technology are constantly changing, educational *standards* must be regarded as fundamentally *relative* (Beeby 1969). Furthermore, standards set should be periodically reviewed -- on the basis of research studies -- also because aspirations and expectations of the populations change.

During the late sixties, the fact that many developing countries set the same excellence targets for *secondary and university graduates* as those prevailing in developed countries, despite considerable difference in resources, was criticized. It was felt that this practice privileged an élite at the expense of the educational and social needs of the vast majority of youth in these countries for whom reforms in curricula and examinations were vital (Beeby, 1969).

To-day the discussion on 'educational standards' focuses less on how the performance of students in developing countries compares with that of students in industrialized societies. The issue is rather how to ensure that as many as possible of those enrolled acquire the *minimum* cognitive, practical and social *skills* in order to compete on the labour market or to benefit from further training.

## 1.3 Measurement of quality of education

In practice, defining educational quality, as in Section 1.1 above, creates problems. The quality of an educational system, or part of that system, is often described in terms of

inputs into the teaching process (teachers, equipment, materials, etc.) rather than in terms of student achievement, basically because inputs are easier and less costly to measure.<sup>2</sup>

Furthermore, these measurements focus on *formal* rather than *actual* quality characteristics: a school can have highly qualified but not necessarily very motivated staff, whereas another can be poorly equipped and yet able to make good use of the few facilities it has (Carron and Ta Ngoc 1980).

There are also some indicators which are frequently used by planners in developing countries as approximate means of measuring quality, e.g. repetition, drop-out, promotion and transition rates. This is probably due to their availability. Nevertheless, whilst they are useful for making aggregate comparisons between regions of a country, and between countries, they are less relevant for analyzing differences in performance between schools and between children within the same grade. For this, measures of learning outcomes will be necessary (Lockheed and Hanushek 1987).

However, where such data exist, (for instance results in standardized achievement tests) they tend to focus on the acquisition of the traditional knowledge and skills. They are often only available in general cognitive domains - verbal skills and mathematics - and not as regards manual skills and behavioural patterns. Furthermore, the attainment of more complex - but not less vital educational objectives - are rarely evaluated: 'individuals, capable of working in cooperation with others'; to demonstrate ability of inquiry and problem solving', etc. (Ross and Mählick, 1990).

#### 1.4 Quality, effectiveness and efficiency

The terms 'quality' and 'achievement' (i.e. students' examination results or test performance) are sometimes used interchangeably by planners and administrators when describing the evolution of the educational system or when comparing the situation of a school or group of schools. However, such analysis based on the results or outputs alone, do not tell how the schools operate. A school whose students score higher than students of other schools in that district (or above the national average) is not necessarily an effective school: the higher pass rates and scores may be explained by the higher academic entrance level of the students, and/or by the fact that they come from more educated families; these families may also give additional material support to the school.

An *effective school* is a school which gives a significant contribution to the students' achievement independently of the students' background and the community context. In other words, it is the value added by the school to the students' literacy, academic and social skills through its teaching practices, general organization and management, etc.

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2. Though what really matters, in the end, is what the students have or have not learned, the quality of the education services provided also needs to be evaluated in its own right. In fact, policy efforts also aim at improving access to education and reducing disparities. The quality of the learning environment, human and material conditions in the classrooms are important in attracting and retaining pupils in the school. Also, in a more general manner, governmental strategies of this type are, as a rule, formulated in terms of means (i.e. increased supply of qualified teachers, textbooks, etc.).



The notions of an effective school or educational system and, generally speaking, *effectiveness*, are part of the larger concept of *efficiency* in the sense that an output (or several outputs) are related to a set of inputs. *Economic efficiency* signifies that cost and benefit values are attached to the inputs and outputs (Windham 1990). Interesting elaborations of the concepts of 'quality', 'effectiveness' and 'efficiency' are also found in Fuller (1985), Lockheed and Hanushek (1987).

### 1.5 Expansion and quality decline?

Any attempt to open up the system, be it universalisation of primary education or 'going comprehensive' at lower secondary education, seems inevitably to lead to the *belief that mass education will be achieved at the price of lower quality.*

It is usually difficult to check whether an increase in enrolment numbers has or has not resulted in a decline in the quality of knowledge and skills acquired by pupils. In the first place, data on academic achievement over periods of time are lacking in most developing countries. This means that people base their judgement on the quality of the educational services or the learning conditions. Caillods and Postlethwaite (1989) report several examples of deteriorating facilities and conditions of work (non-maintenance of buildings and equipment, lack of desks, teaching materials, etc.) and probably increasing teacher absenteeism. Secondly, where data do exist, the comparison is made hazardous by the fact that the small group of children enrolled 'in the old days' is not comparable, either in sociological composition or in initial ability, with today's enrolled masses and by the fact that over a period of time the curricula taught have evolved and so has the teaching methods used.

When sufficiently complete time series are available, as is the case in several industrial countries where the army tests young recruits, it is generally observed that mass schooling produces an *increase*, and not decrease, in total cognitive skills. The International Association for the Evaluation of Educational Achievement (IEA) compared countries with *high* and *low retention rates* and found that the achievement level measured by standardized tests of the 'best' 10 per cent remained fairly stable regardless of the level of mass schooling achieved in the various countries. (see for instance Comber and Keeves 1973). A *positive* effect is observed for 'better' *middle level* pupils. The impression of 'lower standards' is therefore merely due to the presence of a large contingent of pupils in the classes who would previously not have attended school at all, and who, of course, lower the *general average of the enrolled group*. That said, the global performance of the system (i.e. the *total* cognitive achievement of each *age group*) is definitely on the increase since previously unenrolled pupils now acquire some cognitive and other skills. Thus, it is important to be clear about whether one is referring to the changes in the total achievement of an age group, the average achievement, or the best 10 or 20 per cent.

'Scientific' evidence of a positive effect of mass schooling on academic achievement nevertheless would have little effect on teachers and the general public. Even supposing that rigorous evaluations are conducted on this point in developing countries, and that the findings were reassuring, as they probably would be in most cases, there is little likelihood that they would be believed, since public opinion is convinced that 'declining quality' is an 'obvious reality'.

What unconsciously prompts such pessimism is probably the much more justified fear that the economic returns on education will fall as a result of its increasingly widespread availability. Any innovation that does the slightest thing to modify a 'traditional' educational pattern, commonly associated with the economic success and status acquired by yesterday's schooled élite, has every chance of being labelled 'quality-lowering'.

The expansion of secondary education, which has been considerable in most countries, has never been able to satisfy the social demand and, as a result, the number of *private* schools is rapidly growing. Part of the current debate in many countries dwells on whether the learning conditions and the quality provided in the private sector are different from what is offered in state schools.

There is another aspect to the question of level in absolute terms which has not yet received the attention it deserves, especially in developing societies. Empirical studies in the industrialized countries suggest that in setting the performance standards (for instance what should be required for a passmark in a given grade), the teacher is influenced by his perception of the general level of his specific group, whether he feels it to be a 'bright' or 'dull' class'. The result may be that the marks attributed to students individually cannot be considered as an 'objective distribution of performance' (Husén 1975). Similarly, individual students may see their performance as a failure, and their capacity as lower than it really is by virtue of being in a very bright class. Bloom (1972) underlined the importance of such perceptions for student motivation and ultimately educational achievement and this led him to question the whole conception of individual differences in student achievement. A key point in the conception of *mastery learning*, developed by Bloom and his colleagues, is that the absolute objectives of learning should be set in such a way that, with adequate instructional methods, a majority of students are able to reach high standards of learning set in absolute terms.<sup>3</sup>

## 1.6 Relevance and the development of curricula

Rapid growth, rather than increased relevance of education, was a priority during the 1960s in the newly independent nations. The impressive expansion that took place at all levels was merely built on existing syllabii, although the most blatant expressions of colonial heritage were removed (Lewin 1985). The first wave of 'qualitative reforms', prepared in the late 1960s and early 1970s, aimed at adjusting the educational system to the socio-economic and, above all, cultural needs of the country. These efforts concerned above all the introduction of endogenous curricula but structural changes in the system were also envisaged. In many countries, especially in Africa, this kind of reform went beyond the

3. The theory of *mastery learning* originates from acknowledgement of the fact that the vast majority of pupils in a normal school class are capable of achieving a mastery objective if they are given enough time and support to overcome their difficulties. Usually, one learning unit must be mastered before starting the next, and it is the pupil him/herself who determines the rate of progression. Hence instead of keeping the duration of the teaching constant and allowing for variations in performance, the mastery learning technique gives everybody a chance to produce high quality work and always to progress on a confident basis. Bloom has shown that the pace of progression from unit to unit tends to accelerate, which allows for an efficient organization of the teaching/learning process to be maintained. (De Landsheere 1979).

teaching-learning process in the traditional sense ('ruralization of the curriculum', 'education and productive work', 'education for self-reliance', etc.).

In addition, efforts were made to up-date existing written learning materials and to adapt the curricula, in for instance mathematics and science, to the new trends prevailing in industrialized countries. Unfortunately, the attention and resources given to teacher-training in curriculum development rarely corresponded to what was expected from the teachers.

It appears that in most developing countries activities concentrated more on secondary education rather than on primary, because of the former's crucial position as regards allocation and selection of pupils.

Other general issues that continue to motivate discussion in many countries include: the *balance between general academic subjects and those more practically oriented*; the extent to which the primary curriculum should be *terminal*; and last but not least, the language of instruction. The first two issues will be treated in more detail in Section 1.7 on equity. However, it is important to note in passing that by continuously adding new tasks to the primary curriculum, the schools may ultimately have more than they can cope with. As regards *language of instruction*, there is now sufficient research evidence to suggest that instruction in the pupil's mother tongue is preferable in terms of learning ability, at least during the first years of schooling. The systematic use of local languages for instruction is politically ultra sensitive in many countries, and this explains why final decisions on choice have frequently been postponed, seriously hindering curricular reforms. But technical and resource problems concerning the preparation of teaching materials, training of teachers, etc., are often considerable.

The first wave of curricular reforms achieved mitigated results, and some never even materialized. For instance, in West African countries, the relative failure of these efforts was due to two basic factors. Firstly, changes in content did not really mean that the school became adapted to the local milieu, nor did it contribute to its transformation. Secondly, the teaching/learning methods remained unchanged. It would have been necessary to develop a new pedagogy which took into consideration not only psychological aspects of the African child, but also the values and modes of lifestyles of African civilizations (Lankonde 1988). This is significant in the light of official intentions announced in many African and Asian countries, to stress the importance of child-centered curricula and activity-based teaching.

In spite of this, however, the first real decade of curriculum development in the majority of developing countries was the 1970s when networks of curriculum development centres were created, endogenous learning materials prepared and disseminated, etc.

The 1980s situation were different. Enthusiasm for new reforms was very limited since previous ones, often vague and unrealistic, had not met up to expectations, and the period of economic recession did not encourage decision-makers to launch a series of innovations. There are other 'built-in' barriers which prevent improving the relevance of curricula: the strictly instrumental examination-oriented motivation of pupils and their parents in participating in the school system, the excessive reliance upon formal academic qualifications by educational authorities and employers in the recruitment/selection process, and the purpose and content of the public examination system.



*Current challenges* are faced with trying to understand better the notion of curricular relevance (for whom? and to what ends?) as well as formulating educational goals and translating them into curricular objectives. As regards the first point, more research is needed, for instance, on the social and economic expectations of educational provision among the various actors and beneficiaries of education; and on the intellectual, attitudinal and psycho-motor skills required by the main forms of employment.

In trying to define learning objectives more clearly, it is also urgent to set up adequate performance standards for different grades or cycles of primary education in order to enable proper assessment of achievement levels; this naturally implies improving current testing systems.

## 1.7 Equity and quality

### 1.7.1 The concept of educational equality

The meaning given to the concepts of equity and educational equality and the place they occupy in the development of society at large vary considerably between cultures and even between countries within the same culture. Equity is probably still more relative as a concept, more bound in time and space than the notions of quality and educational standards. It is determined by the past history of a country and is also linked to the political ideology governing that country at a particular point in time.

Our understanding as to how the concept of educational equality has evolved in the industrialized Western countries has been greatly facilitated by researchers like Coleman (1968) and Husén (1972 and 1975). The development of the educational system in all Western countries during the past three decades certainly confirms what certain social and educational philosophers had foreseen: the equality of educational opportunity i.e. the same opportunity of access to schooling and the same provision of quality education do not entail equality of results, either in school or in working life. This leads radical educationists and researchers to advocate a 'redemptive egalitarianism' i.e. that underprivileged groups or areas in society should receive *more* resources, time, attention, etc. than the average student. In fact, attempts were made in several countries (such as United Kingdom, USA, France, Australia, the Scandinavian countries) to achieve equality of educational *results* through various *compensatory* measures for minority groups and those living in remote areas. The effects obtained so far are not conclusive and the move towards 'redemptive egalitarianism' has, in most cases, been *partial*. Coleman himself recognized - without renouncing his own basic egalitarian conviction - that the notion of equality was unrealistic; society cannot provide resources selectively *ad infinitum* to compensate for genetic and environmental inequalities among children.

To what extent is this discussion relevant to Third World countries, where the resources for formal schooling are infinitely smaller? The concept of equality of education in Western countries is very much tied, though not exclusively, to disparities between different social strata or groups. In developing countries, to understand the equity problem, and, more generally, the social differentiation process, one has to consider many different factors such as: race, ethnic origin, occupation, regional origin, lineage, sex, etc. Among these, according

to Foster (1977, 1980) *regional disparities* constitute the highest form of educational inequality.<sup>4</sup> That said, relating equality of educational opportunity to equality of educational results is also useful for analyzing the situation in developing countries.

### *1.7.2 Strategies to improve access, quality and educational equality*

For the purpose of our discussion, we shall use Heyneman's (1980) framework, in which some major equality strategies are outlined and related to social and economic feasibility considerations.

Heyneman's position is, in the first place, that the relevant strategies for developing countries relate to the provision of equal opportunities rather than to equal results -- both for reasons of resource constraints and social acceptability. As both mastery learning and the use of quota to achieve equal results mean that low performance groups in education get the most assistance, this has to be acceptable to others before it can effectively function as a policy. 'Quota' is used here in the sense of characteristics established at birth (sex, race, parental status). (See Table 1).<sup>5</sup>

**Table 1. Educational equality strategies and their costs (Heyneman, 1980)**

| Low cost                                                             | Medium cost                                                                       | High cost                                                                                                        |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Universal access to first-level schooling(1)                         | Proportional mixing of pupil ability and background characteristics in schools(1) | Unlimited expansion of higher education(2)                                                                       |
| Equal school quality: curricula, teachers and physical facilities(1) | Mastery learning (minimum achievement) on the part of every child(2)              | Maximum levels of achievement from particular social groups by unlimited compensatory education and/or quotas(2) |

(1) Goal: distribution of educational resources: the equality of educational opportunity.

(2) Goal: distribution of the effects of those resources: the equality of educational results.

Secondly, providing equal access to schools is obviously a very important step since it determines the attainment of other objectives of equality. Thirdly, (at least in the USA) the idea of equalizing school quality through the provision of teachers, equipment and facilities, curriculum, etc. is the more easily accepted strategy by most citizens, at least in the USA. Fourthly, it will take a very long time for disadvantaged groups to reach, if ever, the level of achievement of children from other groups through compensatory education. Policy

4. Issues concerning the relationship between education and social mobility, the placement of individuals and groups in the economy, will not be treated further here.

5. 'Unlimited expansion of higher education' is not really an alternative. It is doubtful if any society, within the foreseeable future (not even the richest countries), will have the resources to attain something like universal higher education.



measures outside education will also be necessary and the whole thing is likely to be very costly. Here a quota system will give more immediate results in terms of access, but not necessarily in performance after entrance. This highly political issue could also be technically quite complex if the quota system is to be based on several characteristics (sex, region, family background, etc.).

More recent empirical studies, (Heyneman (1983, 1986) show that disparities in access and educational achievement tend to increase not only between industrialized and developing countries but also among developing nations. While some developing countries have already achieved universal access to primary education, others have not. This means that equality strategies will differ. In the deprived areas of low-income countries in the Sub-Saharan African and South Asian regions, improving the equality of educational opportunities is, for the moment, *not* a question of *equalizing* school quality but rather providing the minimum conditions and resources necessary for meaningful teaching (Ahmed, Carron 1989, *ibid*).

Another point raised by Heyneman which needs further discussion concerns mastery learning and whether this is something feasible or practical in developing countries: 'an impoverished society, one which has aspirations for industrialization, cannot afford to give the most resources to the least able' (Heyneman 1980, p. 123). When analyzing this problem, it is useful to distinguish between compulsory schooling and post-compulsory education. With schooling in principle imposed on all young people, is it really conceivable for today's educators not to aim at equipping all future citizens with the necessary basic skills? In our opinion, the answer is no: research should concentrate on modes of learning which would facilitate the progress towards equalizing results without implying excessive costs; the focus should be on a better organization of the 'normal' work in the class rather than on injecting specific remedial measures for the less able pupils. As regards post-compulsory education, the goal is no longer basic education for all but education of the countries' future cadres. At that level the conception of equity becomes different (equality of opportunity rather than results) and the efforts should focus on avoiding discrimination linked to geographical origin, home background and sex in access and pursuit of secondary and higher studies. In conclusion, mastery learning remains one of the most promising devices for both developed and developing countries, and it may be too costly, in the broad sense of the term, to eliminate it too early. Part IV of the present review reports experiences of the use of mastery learning in Malaysia and Korea.

Apart from affirming that universal access to first-level schooling is a kind of obligatory first step towards equality, Heyneman has not really indicated possible linkages between the various strategies, whether they are likely to follow a sequential pattern or not, etc. Examples of such linkages and illustrations of possible policy options -- where educational equality is but one of the priorities -- are found in Hallak (1990).<sup>6</sup> The author demonstrates that policy-makers must, at the same time, take into consideration the need for correcting imbalances between education and the labour market, achieving universal

6. The author has in fact attempted to describe some prospective trends for education and the development of human resources during the 1990s in selected countries in Africa, the Arab region, Asia and Latin America.

literacy, reducing inequalities of access to education, improving the quality of education and increasing the efficiency in the use of resources. It is also important to recognize that the general economic, social and cultural context may differ substantially from one country to another. Furthermore, the likelihood of successful development of education and training varies with the prevailing specific conditions from one country to another and within a country from one phase of development to another.

The methodology used by Hallak in his 'mapping educational priorities exercise' (ibid. pp.61-70) consisted in identifying groups or clusters of countries on the basis of some general and specific country characteristics.<sup>7</sup> Secondly, each cluster was then defined by their (likely) major common educational concern and, thirdly, priorities suggested on the basis of major features and constraints shared by the countries. The clusters were labelled according to the priority aim that each cluster had in common: (1) Selective expansion, (2) Promotion of equality, (3) Improvement of quality and teaching-learning conditions, (4) Consolidation and extension of improvements, (5) Reducing qualitative and quantitative disparities.

To illustrate the outcome of this exercise, we shall limit ourselves to the first two clusters. The main issue faced by the first cluster of countries (*selective expansion*) is to ensure wider coverage under stringent financial constraints through the development of an effective delivery system: training of good teachers, provision of adequate teaching materials; incentives for improving retention of both students and teachers, more and better use of radio, etc. The common concern of cluster which comes next upon the economic and educational ladder (*promotion of equality*) is the huge disparity among regions, socio-economic groups, and educational levels. What is at stake here is the government regulation of the student flows and therefore priority should be given to incentives (including development of pupils' orientation and guidance) and examinations, especially at the secondary level. Another priority concerns the mobilization of non-governmental resources to finance education.

When moving from cluster 1 to other clusters, i.e from the group of the poorest countries with low enrolment rates towards the group of economically advanced developing countries with high enrolment rates at all educational levels -- some of the major issues remain, but are modified in scale, and perhaps in importance. It should be noted that there is some *overlapping*. The lack of adequate teaching materials in rural areas, for example, still affects the educational environments in clusters 4 and 5, but to a lesser extent than in clusters 1 and 2. But it is also clear that the same priorities cannot be valid for all countries and cannot be implemented immediately and all at once. It is, therefore, necessary for each

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7. The three main criteria used to group the countries were:

- degree of development of the educational system as seen in primary, secondary, and higher enrolments;
- income levels as seen in GNP per capita;
- size of country, which correlates with breadth of range of priorities.

But also specific problems were identified, problems that may require particular attention in the respective groups of countries: sex inequalities, rural urban disparities; weaknesses in educational financing and management, etc.

country, in the light of its own practical issues and capacity, to address them and to identify and select its own agenda for action.

### 1.7.3 Curricular equity

To reach the deprived groups and have them participate and complete primary education cannot simply be a question of removing physical and economic barriers. It has repeatedly been said, although probably too simplistically, that unless primary schooling is adapted to the needs of the local population, the situation is not likely to improve. Diversifying the curriculum almost became a slogan at one stage. However there is every likelihood that, in practice, this will mean that certain categories of children, particularly those from rural areas, will be taught a curriculum that prevents them from continuing their schooling to the next level of education.

According to Heynemann (ibid, 1980), the *equitable curriculum* does not make primary terminal for some and at the same time expose others to subjects, or even more tuition in certain subjects, which will allow them to continue their schooling. This implies that educational goals in urban and rural areas should be identical in *primary education* and that specialization should occur at higher educational levels, although not necessarily on a regional basis which could exclude students from some regions).<sup>8</sup> It also means that the curriculum in all primary schools, and in most secondary schools, should concentrate on mathematics, science and language (as opposed to highly specialized, vocationally-oriented subjects such as auto-mechanics). Since the examinations that select students for the next level of education are largely based on these subjects, their reinforcement will increase the likelihood of children from under-privileged groups or areas being able to continue. Furthermore, rapid technological change requires a population with a good knowledge of science and maths, and those who stay in rural areas are likely to learn new things more quickly and be more productive farmers than those only exposed to 'curriculum in farm skills'.

A slightly different view on the issue of relevance and equity in primary education has been presented by Ahmed and Carron (1989). To them what is needed is a curriculum with a common core of learning considered necessary for all children in the country combined with locally relevant knowledge and skills in order to improve health, welfare and living conditions. This is particularly important if the deprived groups, ethnic and cultural minorities are to identify themselves with the objectives and content of the curriculum. But adjustment to local needs also means flexibility in terms of school calendar, working hours, the organization of the teaching-learning process and use of instructors from the local community. Furthermore, centering the teaching-learning process on *local circumstances* and using examples from day-to-day life is probably instrumental for achieving the basic learning objectives of primary education for all groups of children.

8. In some countries, there exists in reality a dual system with a small number of elite schools (in the capital and major towns) which stress only the academic objectives as opposed to the practices in the schools attended by the majority of the students (Somerseth, 1982; Lewin, 1985).

## Part II

### Quality of education in some development plans



## 2.1 Introduction

The purpose of Part II is to review how policies on educational quality have developed in a few selected countries. We felt that socio-economic development plans (cf. Section 2.2 on Functions and aims of education) could communicate a general idea of government priorities as regards problems of educational quality, and if possible, how the authorities view the relationship between quantitative expansion and qualitative improvement, the connection with concerns for equality, etc. it could also convey whether some aspects are considered to be more problematic than others (e.g. qualifications of teachers, shortage of relevant teaching materials, etc.), and whether there are any differences between primary and secondary education in these respects. We also wanted to know the main features of the strategies adopted to improve the quality of education and whether these strategies had changed over the years.

Although sectoral plans were of some importance in guiding the selection of educational programmes and projects during the 1960s and 1970s, this is no longer the case. In other words, the preparation of projects, particularly for external financing, is rather loosely related to the process of plan elaboration, and the *real* priorities of governments are expressed in the annual budget rather than in the plan. Although the increasing importance of the budgetary process, especially in countries with struggling economies, is undeniable, development plans will continue in many countries to express the desires and intentions of the authorities regarding the future of a given sector.

Another limitation resides in the fact that the central level planners in charge of co-ordinating the plan preparation are usually not themselves specialised in the qualitative aspects of educational development, even if they receive contributions from other ministerial departments and universities. With these reservations in mind, policy documents of this nature -- supported by more elaborate documents on reforms, etc. -- can convey some interesting information about trends in the countries concerned.

We confined our study to two African and two Asian countries: Kenya, Tanzania, Malaysia and Thailand. The choice of countries was influenced by both time constraints and the quality of documentation available at the IIEP. The period covered varies between 15 to 20 years. In all cases the starting point is the late 1960s; for two countries our information goes up to the mid or late 1980s, for the other two up to the early 1980s.

To identify the major trends, content analysis of the documents was undertaken. It goes without saying that we cannot claim a high degree of scientific accuracy in this. What we have tried, in fact, is to let educational development plans speak for themselves.

## 2.2 Functions and aims of education

The principal functions attributed to education are similar in all four countries and these functions remain, by and large, the most important throughout the period considered. Education, as viewed by the governments of the countries concerned, is a vital instrument in the creation of a modern economy: it is supposed to generate educated and skilled manpower to increase their scientific and technological development. But education is also a powerful means to preserve cultural values and heritages, to maintain or improve national cohesion. To achieve greater cohesion and national unity, disparities in living conditions and opportunities among various groups of the society must be reduced and in this respect education also plays a major rôle.

For instance, during 20 years Tanzania has been guided by the policy of *education for self-reliance*. This meant focus on knowledge, skills and attitudes which are appropriate for the development of a socialist society. In Malaysia, the overall objective has continued to be the promotion of national unity and increased participation of all Malays in national development. Thailand stresses the necessity of having trained human resources at every level, but attaches equal importance to the training of citizens for participation in a democratic society. During the 1960s and 1970s, Kenya's development plans emphasized the role of highly trained expertise to support an independent modern economy at a high growth rate; but they also put forward the socio-cultural objectives which are essential both for the enrichment of people's lives and for the maintenance of a cohesive and productive society.

Other major trends which transpired in the policy documents up to the mid/late 1980s included:

- the growing importance of culture in education for promoting national unity;
- the recognition that investment in education *per se* will not improve the country's economy; education has an important part to play in a multi-sectoral strategy for economic development;
- an awareness of the limitations of a strict manpower approach in non-compulsory education; but also recognition that reorienting students towards science and technology is a necessity.

## 2.3 What are the quality issues and concerns?

### 2.3.1 *The objectives and content of the educational process*

Sectoral plan documents convey a very general idea of shortcomings and necessities for change in student learning, and on what pupil behaviours, skills and attitudes the emphasis has to be placed on.

Criticism was directed at 'excessive emphasis on strict academic orientation' (Thailand), childrens' lack of appreciation for manual work and non-acquisition of practical skills (Kenya, Tanzania) or pre-vocational skills (Malaysia). In other words, the curriculum was designed for a minority of students who would continue to secondary education rather than for preparing a majority of them for their future life in society. Hence the quest for making primary education truly conclusive (Tanzania, Kenya).

In the African countries, africanisation of the curriculum started after independence but progressed slowly; its implementation was clearly delayed by the lack of trained teachers, textbooks, etc. This brings us to another major concern, namely the language of instruction. Throughout the whole period covered here, Malaysia, in particular, has pursued relentlessly the introduction of a language of instruction, namely the language spoken by the majority of the population (Bahasa Malay), first in primary then in secondary and, ultimately, in higher education. This has been a priority in all educational plans in the expectation that this would contribute to national unity. It is also an important issue in other

countries. In Tanzania, there was some apprehension of the educational problems and the social implications of moving towards an educational system in which the primary level is conducted in Swahili and secondary and higher levels in English. The small minority pursuing their studies at the upper levels may become alienated from the rest of the population.

During the late 1960s early 1970s, the usual organization of the teaching-learning process and prevailing techniques were criticized in many countries. In Thailand this criticism concerned the importance given to memorization, the rigidity of the course content and of the teaching-learning process itself (Thailand 1987).

### **Secondary education**

The objectives of secondary education in all four countries were to train the future manpower that the country needed for its economic, social and technological development. But in reality, it seemed that only Tanzania applied a strict manpower approach in its planning and management of secondary education. Already in the late 1960s, Kenya voiced concern about the high rates of output from secondary schools compared to the existing and expected employment opportunities. The situation got progressively worse and in the mid 1970s.

In Malaysia there was a great demand for secondary education graduates and in quantitative terms the educational system responded well; but there seemed to be a mismatch between the knowledge and skills required by the labour market and what was taught in the schools. In fact, the lack of relevance of the secondary curricula constituted a major problem in all four countries; more specifically there was an imbalance between general education and science and technological subjects and not enough emphasis given to vocational skills.

What were the major issues and concerns in the mid/late 1980s? How do these compare with the situation 15 to 20 years beforehand? Few 'new' aspects have emerged, but that some of the 'older' problems have been better identified and remedies taken to alleviate them. The aforesaid shortcomings incited the governments of Kenya, Malaysia and Thailand to set up national commissions in the mid and late 1970s to review the whole structure of the educational system as well as the objectives and content of the curricula. The 1980s saw the implementation of some of the reforms recommended by these commissions. All countries tried to strengthen instruction in mathematics, science and technology, practical vocational subjects related to agricultural development, industry, commerce, etc. Examples of new personal qualities to be promoted by secondary education are 'leadership capabilities' (Malaysia), 'creativity' and 'innovativeness' (Kenya).

### **Primary education**

During the 1980s, much more attention was paid to pupils mastering the three Rs, the national language, science, practical skills. More emphasis was also put on moral, religious

and civic education in Malaysia and Thailand and the latter country also introduced health instruction, sanitation, etc.

What is striking in the cases of Kenya and Thailand is the strong emphasis put on the functional skills of primary school pupils and the insistence that primary education should facilitate their employment.

In Tanzania, the policy of providing an education oriented towards the needs of the surrounding society, in which the interaction between the school and the local community was crucial, had already been implemented by the late 1960s. Another striking feature is the complete mobilization of the educational system and society at large to achieve universal primary education within a few years. As will be discussed later in more detail, this was not without repercussions on the teaching-learning conditions in primary education and pupil achievement; it also explains why the 1980s were considered in Tanzania as the 'decade of consolidation' (Tanzania, 1983), hence the Government's decision, in 1986, to reintroduce the examination in Standard IV as a means of evaluating the pupils' level of achievement in reading, writing, arithmetic and general knowledge. In some respects there seems to be a complete rethinking of the issue and almost revolutionary change in the whole philosophy since this examination aims not only at '*detecting the weak pupils and giving them remedial classes*', but '*also encourages academic competition among schools and pupils*' (Tanzania, 1988, p. 13). Pupils failing this examination have to repeat the class and are given remedial teaching.

Also the new primary education curriculum implemented in Thailand during the 1980s constitutes a major break with the methods of work prevailing in schools as well as with the teacher's role; pupils' knowledge should be acquired through self-study rather than 'spoon-feeding', through the conduct of experimentation with the teacher as an advisor rather than as a lecturer (Thailand 1987, p. 27). Specialists in strategies for improving access and quality in primary education have recommended, among other things, the establishment of clearly specified objectives, combining quantitative and qualitative dimensions (Ahmed-Carron, 1989). In this respect, Thailand's *Primary Education Development Plan* provides an encouraging example of the progress that has taken place at least in this country, and perhaps in others as well:

*"Not less than 80 per cent of the primary school pupils should possess the desirable qualities stipulated in the 1978 primary curriculum. The average learning achievement in the skill subject area should not be less than 50 per cent while that in other subject-areas should not be less than 70 per cent".*

To sum up, during the past 20 years in the four countries considered here the education systems have been assigned new and more complex objectives (especially in primary education), the content of the curricula has been substantially modified and attempts made in some countries to profoundly change the whole teaching-learning process.

### *2.3.2 Wastage and educational achievement*

In the late 1960s and early 1970s, Malaysia and Thailand expressed concern over the wastage rates in primary education, especially in rural areas. In Thailand the problem of



attendance and drop-out was clearly linked to the insufficient provision of places in upper primary in remote areas. At that time, the main priority in Kenya, and even more so in Tanzania, was the increase of enrolment to reach universal primary education. In the mid 1970s, the *Third Kenyan Development Plan* underlined the problem of repeaters in the last two grades of primary which was influenced by the restricted intake into secondary education. It was not until the end of the 1970s, when UPE was practically attained, that official Tanzanian documents voiced concern about 'truancy' and increasing drop-outs. Throughout the 1970s and up until the mid 1980s, Tanzania's primary education promotion was automatic and repetition only tolerated in a few exceptional cases. It is worth noting that the Standard IV examination was abolished in 1974 to facilitate attendance to upper primary and then reintroduced in 1986.

In secondary education, the main concern in all the countries was to make curriculum content more relevant to the social and economic needs of society, to increase enrolments in vocational education and have more students in secondary science education. In view of the relatively low number of places available in secondary compared to the number of applications, which was extremely low in Tanzania after the introduction of UPE, it is hardly surprising that there is little reference in the texts to problems of wastage at this level. In Kenya, however, the drop-out rates for the science streams of upper secondary were considered too high, thus creating a lack of graduates with science qualifications.

With the exception of Thailand, there is a total absence of references to the level of educational achievement in all country plans. In the mid 1980s, the Ministry of Education in Thailand underlined the fact that academic achievement in primary education varied from region to region, that the larger primary schools tended to produce pupils with higher levels of academic achievement, and that achievement level of urban school pupils was higher than that of rural schools pupils.

### 2.3.3 *Quality of educational services -- conditions of learning*

It is perhaps not surprising that development plans talk much more about the quality of the educational services provided than the performance of the students. This difference is to a large extent due to a lack of, or non-use of, data on student achievement. However, data on teachers and their qualifications are regularly collected and used. The concern for training unqualified teachers at all levels is common to all four countries throughout the 15 to 20 years considered. The role of qualified teachers is often referred to as crucial, 'pivotal' or 'the most vital element' in any attempt to improve the quality of education.

In all countries, the shortage of qualified teachers, both in primary and secondary, is particularly acute in rural areas. The difficulties lie not only in attracting, but also in retaining, suitable teachers in these areas. The science and mathematics teachers were particularly scarce and continued to be so in the late 1980s in spite of considerable efforts made by ministries of education.

Another issue, revealing a more delicate problem, concerns teachers' abilities to carry out educational reforms. Thailand's *Fifth Development Plan* states somewhat bitterly that many primary schools in remote areas are '*manned by teachers of low quality, most of whom lack a proper understanding and readiness to grasp the concept of the new curricula*'

(Thailand 1982, p. 198). Teachers' misunderstanding and misinterpretation of the reform objectives involved in Tanzania's *Education for self-reliance* programme seem to have created serious problems throughout its implementation. A research study explained this by the vagueness of the main goals stated by the Government (Omari and Mosha 1987). The document presented by the Tanzanian Government at the *International Conference on Education* in Geneva, 3-8 September 1990, suggests that priority should now be given to raising the academic and professional standards of teachers (Tanzania 1988, p. 30). This applies particularly to primary school teachers since the aim of Government policy for teachers at the secondary level has always been to maintain their standards of qualification; for a long time this was achieved with the help of expatriates.

Compared to the attention and importance given to teachers, other factors or inputs to the teaching-learning process are only briefly covered in development plans. Problems concerning dilapidated classrooms, deficient or lacking equipment, tend to take precedence over textbooks and didactic materials, at least during the earlier part of the period considered here. The unequal distribution of such resources between urban and rural areas is a common cry in all countries. Both the Malay and the Thai Ministries of Education refer to 'sub-standard' schools in remote areas. Moreover, the Thailand's *Second Development Plan* insists on the necessity of improving overall standards of private schools at both primary and secondary levels. A similar questioning of the general standards of private secondary schools appears in Kenyan policy documents. Inadequately equipped school science laboratories and classrooms were brought to light by the Kenyan authorities. However, this seems to be a serious problem in other countries as well.

The shortage of textbooks at all levels, and especially in remote areas, is an ever-present problem. Although the number of textbook projects has increased in all four countries, only slight reference is made to the importance of textbooks for quality in education and student achievement in plan policy documents (Thailand being the only exception). Despite recommendations made by national curriculum reform commissions, little attention seems to have been given to providing more locally-relevant teaching materials and encouraging teachers to write their own.

In the mid/late 1980s, the provision of educational services and facilities in rural areas continued to be an important issue. As we shall see in the following section, many measures were taken to improve the situation; however, populations living in remote areas are no longer the only target group. To the Malay authorities, the overcrowded classrooms in urban areas constitute a major challenge. Similarly, the Thai Ministry of Education gave priority to so-called 'pocket-areas' of:

- children from minority groups,
- children in congested areas,
- handicapped children.

## **2.4 Strategies to improve the quality of education**

The word 'strategy' here refers to a series of measures announced by countries in their sectoral development plans. The relationship between the measures is not always

clearly defined, but the important thing is that the measures cannot be considered as isolated but rather as a host of activities, sometimes included within the framework of a programme for the 'improvement of primary education'. It is noticeable that under such a heading, one finds both quantitative expansion and qualitative improvement, for example, increasing the number of trained primary school teachers in order to replace the untrained temporary teachers in rural areas. Furthermore, with the exception of Thailand's last *Development Plan (1987-1991)*, no operational definitions or targets are given for quality improvement. It is merely a list of programme/project activities intended to improve the quality at a given level of education. We have tried to summarize below, as accurately as possible, the trends appearing in policy documents but we in no way claim that they are exhaustive. The description is confined to *primary education*. In the late 1960s and early 1970s, there was a very diversified and rich variety of primary education programmes and projects which aimed at making the content of the curriculum more relevant and improving not only the conditions of learning but also the efficiency and quality of educational services.

The concern to increase the *relevance* of curriculum content can be seen in programmes designed to:

- make primary education terminal (Kenya and Tanzania) and, more generally,
- establish a better balance between the academic, practical/vocational and technical subjects (Kenya, Malaysia, Tanzania and Thailand), or
- integrate school activities with those of the surrounding community (Kenya, Malaysia and Tanzania), or alternatively
- extend basic education integrating the primary and lower secondary levels (Malaysia).

The priority given to the use of the national language for instruction in primary education (Malaysia and Tanzania), and subsequently secondary education (Malaysia), can also be considered not only as a means to facilitate young children's learning, but also as part of the effort to make the curriculum more culturally relevant.

Special attention was given to *teacher training* in an effort to improve the *quality of the educational services* by:

- increasing the intake capacity of the teacher training colleges in order to replace unqualified teachers (Kenya, Malaysia, Tanzania, Thailand);
- amalgamating small teacher training colleges into larger ones, thus also expanding their intake capacity (Kenya);
- upgrading unqualified teachers through in-service training (Kenya, Malaysia, Tanzania, Thailand) and especially through correspondence courses (Kenya);
- raising the quality of the programmes for teacher educators (Kenya);
- organizing in-service courses on management and pedagogical support for headmasters (Kenya).

Another series of measures aimed at further *developing* and *strengthening* the support services included:

- reinforcing the inspection, supervision and advisory services for teachers (Kenya, Thailand);
- creating or strengthening institutes, research and development units within or outside the Ministries in an effort to promote educational research, testing and examination, curriculum development, etc. (Kenya, Thailand);
- developing better methods for assessing pupil progress and performance and designing remedial measures (Kenya, Malaysia);
- creating a system for lending textbooks and providing written materials (Thailand).

Programmes for strengthening the existing provision of education in rural areas to 'enhance the quality of education' comprised for instance of:

- amalgamating under-utilized primary schools with larger schools (Kenya, Malaysia);
- providing adequate equipment, including library facilities, to 'sub-standard' schools (Malaysia, Thailand).

During the 1980s, the issue of 'relevance' in primary education, though present in the general policy declarations, does not occupy the forefront as it did in the 1970s. One reason for this is the fact that substantial curricula reforms are now being implemented. New structural reforms and the extension of basic education were nevertheless launched during the 1980s. Malaysia extended its universal schooling from nine to eleven years of age and Kenya introduced the 8th grade in primary (the '8+4+4 reform'). The Kenyan authorities felt that the creation of Grade 8 should help to reduce the high repetition and drop-out rates at the end of primary.

During the last years, the main emphasis seems, to have been placed on improving the 'learning environment', increasing the efficiency of educational planning and management, and improving student performance.

The proposed development in the mid 1980s of *pre-school education and national food programmes*, based on previous voluntary pilot projects in Malaysia and Thailand, seems to indicate an important shift in policy making. The authorities stressed the importance of adequate nutrition for the physical and intellectual development of children and also recognized the role of pre-school education for the development of mental capacities and social interaction among children, which, in turn, are likely to influence their performance at the primary level (Malaysia, 1986). For similar reasons nutrition projects became increasingly important in Kenya as well.

Most of the discussion on the determinants of educational outcomes, at least among policy-makers and planners, focus upon 'malleable' factors, i.e. conditions and resources



that in the short- or long-term may be modified or mobilized by the various actors in education. It is therefore interesting to note that the last two development plans of Thailand recognize the fact that the *student* is an important *input* to the educational process and that factors such as cultural background, learning motivation and health/nutrition status can seriously influence drop-out rates and educational achievement.

With regard to the training and utilization of teachers, a series of important measures were announced in the countries surveyed:

- up-grading primary teachers by increasing the length of their pre-service training (Malaysia and Tanzania);
- a massive effort of in-service training to reach the majority of the serving teachers (Malaysia);
- gradually reducing class sizes in *urban schools* and improving class-teacher ratios (42 to 36 in Malaysia);
- mobile units of qualified teachers in Kenya rural areas (to replace the costly primary boarding schools);
- redeployment of teachers in some districts to ensure more equitable distribution of qualified teachers (Thailand).

It is worth noting that, in order to achieve a better class/teacher ratio in urban areas in Malaysia, the authorities had to fill some of the ranks with untrained teachers. Thus, a better use of resources, particularly teachers, was emphasized in the documents. To improve planning and management, Thailand for instance, redesigned its management information systems and expected every regional district educational service to be equipped with micro-computers.

It would appear that Thailand, in its *Fifth and Sixth Development Plans*, is less involved in running teacher-training courses than in the past, but the amount of research and development projects to encourage and improve teaching in core subjects is impressive. The Thai authorities are also making special efforts to provide 'needy' pupils, i.e. those in 'high-risk zones', with textbooks in an effort to reduce the probability of drop-out.

Tanzania has recently given special priority to the learning environment in 22 under-developed educational districts through the provision of desks, textbooks, wall maps, science teaching kits, etc. (Tanzania 1988). The Tanzanian authorities now generally give more attention to improving the standards of curriculum development, examinations and, last but not least, the status of teachers. The latter would be attained by 'making their terms and conditions of service more attractive and by motivating them' (Tanzania 1988, p. 9).

### Part III

The quality of education in the developing countries  
What does research have to say?

### 3.1 Introduction

Any effort to identify the factors responsible for the quality of education in the developing countries encounters a twofold problem: the relative scarcity of empirical research conducted in those countries; and the fact that the research paradigms utilized are perhaps not always the most appropriate, prompted as they are in the concepts applied, the instruments and the methodology, by the realities experienced in the course of studies carried out in the industrialized countries. The fact that the United States accounts for the majority of the world's empirical research on education constitutes an undeniable handicap for drawing general conclusions from the research on school effects (Heyneman 1983).

What the industrialized countries know today about the effectiveness of their education stems chiefly from three research trends or 'paradigms':

(1) *Experimental studies* in which the effect of a given parameter, or of a deliberately introduced innovation, is measured by means of a rigorous device (experimental group/control group). The effect the variable studied (a new curriculum, a new method, new class-organization arrangements, utilization of an educational technology, etc.) can thus be checked under satisfactory conditions.

Overviews -- or, more recently, *meta-analyses*<sup>1</sup> -- of dozens or even hundreds of studies conducted on some specific factor (e.g. the influence of the audio-visual or information media; the role of pre-primary education or the size of the class) make it possible to draw up useful inventories of educational characteristics or processes that turn out to be significantly associated with improved achievement (Fraser *et al.*, 1987, 1989, Fuller 1985, Kulik & Kulik 1989).

(2) *Large-scale input/output research* (national or international surveys), where achievement is set against 'natural' variations in input. An attempt is then made, while statistically controlling the *non-school* features of the input (pupils' sex, age, IQ and home background), to identify the educational variables associated with better achievement.

These studies are sometimes accompanied by *cost-effectiveness analyses* which aim at identifying, among several factors likely to improve the output, those that appear most efficient (cases where the hoped-for 'profit' or effect is significantly in excess of the necessary investment to improve output).

(3) More recently, *field studies on school effectiveness* (using techniques of observation and case study analysis) centred on in-depth analysis of the operation of institutional units. These studies differ markedly from the two previous 'families' in that they place less emphasis on the identification of input variables that can be altered separately (supplying more textbooks, increasing the number of teachers, improving their training) and focus rather on process variables and systemic factors (school climate, nature of leadership, style of management, interactions between population characteristics and teaching practices).

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1. A description of this approach is provided in the Appendix.

As far as we know, this third line of research, which currently seems very profitable in the industrialized countries, has just started in the developing countries.

Experimental research, while not totally lacking, is yet far short in the developing countries of providing the rich harvest of data it affords the industrialized countries. The fullest information is rather of the 'quasi-experimental' type and comes from a few cases where *substantial educational innovations* have been accompanied by rigorous evaluation. Cases in point are the various studies in conjunction with experiments involving the introduction of audio-visual teaching systems in various developing countries (El Salvador, Samoa, Niger, Côte d'Ivoire, Mexico, Brazil).

What these studies have in common is that everywhere, or almost everywhere, positive effects associated with innovation have been noted. However, the new technologies have finally been abandoned (or reduced to a back-up role). The studies made of these attempts are, for this very reason, particularly valuable since they highlight the difficulties of every kind faced, in the Third World, by 'rational' initiatives for improving the quality of education. Systematic reviews, such as that undertaken by Unesco (Eicher *et al.* 1980) on the new educational media could be extended to other types of reform or innovation of importance to the developing countries, that are often faced with serious difficulties in the field (e.g. rural-oriented curricula). Preventing decision-makers from re-embarking on dead-end policies or alerting them to factors liable to void their efforts seems at least as useful as drawing up an inventory of educational variables whose improvement produces significant gains in achievement.

The best-represented research family in the developing countries is therefore still that of the input/output surveys. Being very close in its logic to the 'production equations' of the economists, this paradigm has some particularly attractive aspects. In countries marked by scarce resources, and where deciding between conflicting demands is a problem, it is crucial to command tools for identifying educational investments with the best chance of yielding significant improvement in achievement terms.

Basically, the debate on factors likely to improve the quality of education in the Third World has consequently been fuelled by this type of study. We shall begin by recalling the main results achieved in this respect before venturing to discuss the limits or shortcomings of this model, which, as we see it, argues in favour of a better balance between input/output studies and the other approaches described above.

### *3.1.1. School quality as VALUE ADDED: merit and limitations of the input/output approach*

Is it possible, by measuring the outputs of an education system and comparing the differences in achievement observed with variations in input (type of population involved, resources available, quality of the environment and of the education processes utilized), to identify the most decisive aspects calling for priority attention from decision-makers?



The most usual method used, with this in mind, is regression analysis, which enables to control variations in achievement connected with *non-school characteristics* of the population (background of pupils, ability level on school entrance). The school characteristics subsequently introduced into the analysis are set against the residual achievement variance. This permits identification of those which, at an *initial pupil level regarded as equal*, are associated with significantly better achievement. This 'added value' can be quantified, being reflected in the *additional part of the achievement variance* predicted by the educational variable studied. Therefore, the model is supposed to make it possible not only to identify the relevant factors but also to assess their respective importance or 'weight'.

The main results yielded by this research family can be very roughly outlined as follows:

- In the industrialized countries, most differences observed appear to be linked to the pupils' *home background* and, in particular, the socio-economic status (SES) of the parents. The characteristics of schools, of the teachers and of the teaching methods used account for only a small part of the variance, and usually inconsistently (there are a great many educational characteristics possessing an *unstable* linkage with achievement, the correlation coefficient (r) being significant at times and not at others, sometimes negative and sometimes positive according to the subject, the educational level and the geographical area in question). In short, it seems that schools do not account for the real differences (Jencks 1972).
- In the developing countries, where cleavages of social origin were expected to be still more pronounced, the opposite is found to be true, the socio-economic and cultural status of pupils is much less linked to achievement than in the industrialized countries and the 'school' factor weighs far more heavily in explaining the variance (Heyneman and Loxley 1983; Heyneman 1986).

\* \* \*

According to Heyneman and Loxley, the explanations are as follows:

- *The education service is probably more uniform in quality in the industrialized countries.* Much more pronounced contrasts are to be found in the developing countries (unequal training of teachers, unevenly distributed resources in books and equipment, big divergences between educationally disadvantaged rural areas and urban centres, etc.).
- In addition, *the differences in background in the developing countries are in fact less fraught with consequence, or less likely to have direct effect on children's achievement*, for three sets of reasons:

- (i) *Economic considerations.* The scarcity of educational supply and the substantial economic benefits expected of it by families induces, in the developing countries, an intense motivation for academic success, equally shared by all sectors of society.
- (ii) *Sociological factors.* The various social groups do not yet, in the developing countries, form such stratified social classes as in the industrialized countries. It often happens, even in privileged circles, that illiterate family members are also to be found living under the same roof.
- (iii) *Cultural and linguistic reasons.* Here again, families in the developing countries experience less pronounced differences. This is particularly so where language and contact with the written word are concerned. Book resources for children, for example, differ very greatly between social classes in the industrialized countries, whereas in many developing countries there is little or no children's literature.

Heyneman (1980) thinks then that the determinants of achievement are not the same in the industrialized and the developing countries: 'Outside the industrial West, we may find the opposite of what Jencks and others say is true for the United States'.

While affording virtually no indication of what policy should be adopted in the developed countries to improve the quality of education, do these findings provide decision-makers in the developing countries with any real scope for action?

Our own point of view on this line of research is more reserved, for the following reasons:

- (1) The 'school' factor is no doubt more consistent in studies conducted in the developing countries than in the case of the industrialized countries. But evaluating it in *relative* terms (the part of variance explained by educational variables vs that to be ascribed to home background) leads, in the developing countries, to overestimating it. In *absolute* terms school-linked variance admittedly tends to be greater in the developing countries, albeit with considerable variations from country to country. It would therefore be more appropriate to examine why *particular countries* (including some industrialized countries) have between-school variance so much higher than others.
- (2) The snag then is that when an attempt is made to split up this global impact of schools into 'components' to be explained by any particular characteristic, the emerging picture in the developing countries is not much more consistent than that obtained for the industrialized countries. The findings confirm certain thrusts already apparent. They also reveal new ones more specific to the developing countries and, in this respect, are of course very interesting. Yet they do not really dispel the disappointment that has long beset the authors of surveys: that of never seeing emerge from their regressions more than the tips of essentially unsoundable icebergs.

In order for the findings of studies conducted in accordance with an input-output logic to acquire a significance utilizable in the developing countries, it does not suffice to record the educational variables with a significant beta. Thorough interpretation work -- involving an always difficult second-degree 'reading' -- has to be carried out.

(3) The scant correlation observed between home background and educational achievement in the developing countries might suggest that a policy to improve education should concern itself solely with school variables. This would, we think, be a mistake. For while it has little effect on achievement, the behaviour of families in the Third World does decisively influence the operation of education systems and hence the feasibility of prospective reforms. A better understanding of the interactions between home and school, in countries where educational sociology is usually still embryonic, therefore seems to us to be something of a priority.

3.1.2            *Should the problem of the 'school effect' really be posed in relative terms?*

As observed by Harbison and Hanushek (1988), 'there has been a fascination with the question whether families, peers or schools are most important in determining the performance of students' while, they add, "for most purposes, it is not a very interesting question'. The main question, where practice is concerned, is not whether family background is *more* important than school but whether a significant improvement can be expected from altering some school characteristics. For the decision-maker, it is rather the *absolute* magnitude of the effect that counts, in common with the actual political, ideological, administrative and other conditions that to a greater or lesser extent facilitate such action as he may undertake in this respect.

Commenting on the findings of his Report, Coleman himself observed that the low impact revealed for the 'school' factor should be understood in a relative rather than absolute sense: it was the *differences* in available educational resources from one school to another that did not seem to be associated with large differences in achievement; perhaps, he advanced, because finally schools did not differ that much in what they offered pupils. It would be quite another story if one were to look at the absolute effect: between an enrolled child and another not attending school, the differences in output would of course be massive.<sup>2</sup>

From this point of view, it goes without saying that schools have a greater 'absolute' effect in the countries of the Third World, where enrolment does not as yet extend to all children.

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2. In this regard, there is at least one case where the figures do speak for themselves. The county of Prince Edward in America, where difficulties had led to the complete closure over a number of years of the schools which catered for coloured children, became the subject of research (Green 1964, cited by Mayeske et al. 1972). The results of tests given to a sample group of black children of primary schoolgoing age, in this county, were disastrously inferior to those of neighbouring counties: the youngest children had not learned to read and were hardly able to hold a pencil. The others, whose schooling had been interrupted, had an IQ of 15 to 30 points less than the IQ results of a similar survey of black children with normal schooling.

But the debate is elsewhere: *for the enrolled population*, are differences in quality of the education service more marked in the developing countries, with a more even quality in the industrialized countries?

We think that, on this point, the surest indications are not those provided by the share of the variance 'explained' by school variables in the various countries. Comparisons are made difficult, and even misleading in some cases, by a variety of phenomena:

- The *total achievement variance between pupils varies from one country to another*. It often happens that in the developing countries there is a globally poor showing in international tests, and that the standard deviation observed is consequently much smaller than in the industrialized countries. *Assuming that the effect on achievement is equivalent*, block of school predictors will appear to explain a higher *percentage* variance in the developing than in the industrialized countries.

- The *portion of variance that can be explained by the various blocks of predictors* likewise differs from country to country. Owing to the simple fact that the home background block has less impact in the developing countries, the *total variance explained* there is generally smaller. The school block may then appear to come in for the lion's share, even when its 'absolute' contribution remains modest.

- The *quality of the predictors used* is not equivalent. With regard both to home background indicators and school quality indicators, the use of standard instruments has the effect of *reducing* the share of explained variance in those countries for which the instruments are less appropriate. This is often the case of the developing countries, where 'tailor-made' SES scales<sup>3</sup> prove more effective than the 'classic' Western indicators (income and occupation of parents). Similarly, the discriminating items in the non-home environment will, in the industrialized countries, be the proximity of a museum, a zoo or a library; in a developing country, it will no doubt be more fitting to ask whether the community possesses a post office, electricity, surfaced roads, and the like. In class, lighting and the presence of a map or a book corner are hardly discriminating indicators for the industrialized countries, whereas their predictive property is generally excellent in the developing countries. The variance 'explained' by a particular block depends too greatly on the *sensitivity* of the tools used (and on their *local* sensitivity) to serve as a basis for reliable comparisons between such different countries.

- The 'joint' variance between home background and educational variables is often considerable in the industrialized countries, where families of high socio-economic status prove cleverer than the others at 'hogging' the best or most effective education services for their children. This probably leads to an underestimation of the school effect in such countries. The balance between variance explained by socio-economic status and that ascribable to educational variables is greatly affected by this phenomenon of overlapping, which itself varies from one education system to another, according to the location of

3. For example, the various 'economic ease' scales often used as surrogates of parents' income (owning a bicycle, a radio set, armchairs, etc.); or indicators more directly linked to the SES/school relationship (parents buy the pupil exercise books, a ballpoint pen, shoes, the school uniform, etc.).



schools and the amount of say left to families in enrolment decisions (existence or not of private education, of stream differentiation, of competition between establishments, etc.).

Our impression is that it would be better to make a gross estimation of the 'school effect' in terms of *total variance of the criterion between schools or between classes*.

This type of index (*rho*) was calculated in the last IEA science survey (Postlethwaite and Wiley, 1991). The findings do indeed point to greater achievement variations from one school to another in the developing countries (Table 2).

But these averages in fact cover a wide range of national situations. Variance between schools is very low in the Scandinavian countries (from .02 to .09) and very high in the Netherlands (.50), Ghana and the Philippines (.48). It is lower in China (.22) than in the United States (.29), and surprisingly moderate in Zimbabwe and New Guinea (.13 and .11).

**Table 2. Variance between schools for the Population II (14 years) IEA science test**

| Development level<br>(World Bank classification) | Participating countries                                                                                                           | Mean rho |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------|
| 1                                                | China, Ghana                                                                                                                      | .35      |
| 2                                                | New Guinea, Nigeria, Philippine,<br>Thailand, Zimbabwe                                                                            | .25      |
| 3                                                | Hungary, Korea, Poland                                                                                                            | .25      |
| 4                                                | Australia, Canada, United Kingdom,<br>Finland, Hong Kong, Israel,<br>Italy, Japan, Netherlands,<br>Norway, Singapore, Sweden, USA | .21      |

It is therefore most probably at the level of *each particular country* that an attempt should be made to calculate this index of unequal distribution of achievement between schools and, if too high, to identify the cleavages behind it.

A high rho may no doubt be due sometimes to big differences in enrolment from one school to another (socio-economic status or IQ of pupils), sometimes to differences in the 'treatment' pupils receive (quality of the school) and sometimes to a mix of these factors. It is nevertheless true that, whatever its origin, a large variance between schools is a sign of inequity in the functioning of the system, and that it consequently deserves close attention from the authorities.<sup>4</sup>

4. Furthermore, calculation of the rho coefficient offers many advantages. It can be done on the basis of any standardized test (e.g. the results of a national examination or a representative sample of them). It may be worth calculating rho at various levels (between districts, schools, classes, streams, etc.), or for variables other than achievement (composition of pupils according to sex, ethnic origin,

*3.1.3 Significant components of the school effect in the developing countries: how can consistent thrusts be identified?*

If we put ourselves in the place of decision-makers (who expect of achievement surveys conducted in their countries practical suggestions for improving the system), we cannot help being struck by the fact that the results generally obtained are inconsistent and hard to exploit.

Here, for example, is a record of educational variables significantly linked to achievement in science, compiled in Colombia (Heyneman and Loxley, 1983b):

*"The number of books in the school library; the number of times the library was used each week; the degree of activity of the parent-teacher association; whether the school grouped students by ability levels; whether the school had a book club or a telephone; percentage of absenteeism; whether the school hired contract or permanent teachers; whether the school admitted students by competitive examination; teachers' parental occupation; the size of teachers' houses; teachers' occupational satisfaction; whether teachers felt that all children -- regardless of ability -- were just as likely to be 'troublesome'; the number of teachers' offspring; the amount of experience teachers had in other schools; how often teachers graded the student tests and class exercises; and the degree to which principals believed that improving teachers would improve student test scores."*

The list given by Heyneman and Loxley for Colombia provides a good idea of the kind of particulars habitually supplied by the block of predictor variables (school factors) after a regression analysis. Variables of potential interest (because their direct linkage with achievement can be surmised and because they indeed appear alterable: number of books, maps, etc.) are to be found amidst others that are far less easy to interpret (the existence of a telephone at the school and the size of the teacher's house or that of his or her family seem to be symptomatic variables rather than causal factors).

'Making sense' of such results is no easy matter; making a consistent education policy is even more hazardous. To try to carry reflection further on this point, we shall draw upon data more familiar to us: the findings of the survey on television education in Côte d'Ivoire (Grisay, 1979).

Table 3 shows the results (concerning the teacher's characteristics) of the 19 regression analyses conducted for various disciplines (reading, oral and written expression, mathematics) in grades 1 to 4 of Ivorian primary education.

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SES; uneven distribution of textbooks, funds or educational material; uneven 'opportunity to learn' or 'time-on-table' varying from one site to another, etc.).

**Table 3. 'Teacher' variables associated with achievement in primary education in Côte d'Ivoire (Grades 1 to 4)**

|                                                               |                                                                   | Number of<br>analyses where<br>the variable was<br>introduced | Number of<br>analyses where<br>the coefficient is<br>significant | Number of<br>analyses where<br>the coefficient is<br>positive | Number of<br>analyses where<br>the coefficient<br>is negative |
|---------------------------------------------------------------|-------------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| Sex of teacher                                                |                                                                   | 19                                                            | 4                                                                | 2                                                             | 2                                                             |
| Age of teacher                                                |                                                                   | 19                                                            | 1                                                                | 1                                                             | 0                                                             |
| Type of training                                              |                                                                   | 10                                                            | 5                                                                | 4                                                             | 1                                                             |
| Professional diploma                                          |                                                                   | 10                                                            | 6                                                                | 0                                                             | 6                                                             |
| Years of experience                                           |                                                                   | 10                                                            | 4                                                                | 2                                                             | 2                                                             |
| Direct observa-<br>tions of verbal<br>interaction<br>in class | Composite:<br>'rapid pace'                                        | 9                                                             | 6                                                                | 1                                                             | 5                                                             |
|                                                               | Composite: 'root<br>repetitive oral<br>instruction'               | 10                                                            | 3                                                                | 0                                                             | 3                                                             |
|                                                               | Composite:<br>concretization                                      | 10                                                            | 1                                                                | 1                                                             | 0                                                             |
|                                                               | Composite:<br>'positive feedback<br>and affectivity'              | 10                                                            | 5                                                                | 5                                                             | 0                                                             |
| Vocab. test administered<br>to the teacher                    |                                                                   | 10                                                            | 2                                                                | 1                                                             | 1                                                             |
| Attitudes<br>scales<br>(teacher)                              | Composite: 'Positive<br>opinion of TV<br>education'               | 10                                                            | 2                                                                | 2                                                             | 0                                                             |
|                                                               | Composite:<br>'Feel responsible for<br>achievement of pupils'     | 10                                                            | 10                                                               | 10                                                            | 0                                                             |
|                                                               | Composite: 'Claim<br>good relations<br>with parents'              | 10                                                            | 8                                                                | 1                                                             | 7                                                             |
| Scale :<br>'Disturbance<br>factors :<br>Teacher<br>complains  | of lack or late<br>arrival of written<br>media                    | 19                                                            | 7                                                                | 0                                                             | 7                                                             |
|                                                               | of TV break downs<br>or poor maintenance                          | 19                                                            | 8                                                                | 1                                                             | 7                                                             |
|                                                               | of pupil indiscipline                                             | 19                                                            | 1                                                                | 0                                                             | 1                                                             |
| Opportunity<br>to learn<br>(OTL)                              | Composite:<br>'Utilization of<br>individual written<br>exercises' | 10                                                            | 3                                                                | 3                                                             | 0                                                             |
| Organization of ability groups                                |                                                                   | 10                                                            | 8                                                                | 5                                                             | 3                                                             |
| Size of class                                                 |                                                                   | 19                                                            | 7                                                                | 3                                                             | 4                                                             |
| Grade repeating                                               |                                                                   | 19                                                            | 10                                                               | 3                                                             | 7                                                             |

To put it mildly, such a table is not of the kind that might provide Ivorian decision-makers with more than scant pointers on how to manage the resources of their teaching profession.

Can one, nevertheless, 'make sense' of such data? Two steps seem to us to be necessary to avoid this 'pointillist' character of the results:

- an *external* analysis, seeking to determine whether the data obtained in a particular country present any analogy with those provided by the international literature.

- an *internal* analysis, in which an effort is made to understand how the variables in question 'function' in the specific context of the country, in particular by studying their relationship between themselves and with the indicators gathered as a whole, including those not proving to be significantly associated with achievement.

\* \* \*

### 3.1.3.1 *External analysis*

Here it is very useful to rely upon meta-analyses and compilations of research such as those of Fraser et al. (1987), Fraser (1989), or Kulik & Kulik (1989) for the industrialized countries and of Fuller (1985) for the developing countries<sup>5</sup>. No attempt will be made at this point to summarize these studies since they are overviews of hundreds of research items (and thousands in Fraser's case!). We shall merely reproduce some synoptic tables drawn up by Fuller regarding the teacher and teaching practices in developing countries. We shall then endeavour, still using the case of Côte d'Ivoire as an illustration, to highlight the important potential role of such inventories as 'interpretation guides' for new data, not very explicit when read in isolation.

Comparison of this table with that obtained for the Ivorian education system clarifies a few points:

- The confused results obtained in Côte d'Ivoire for the various variables relating to the *training and experience of teachers* are consistent with similar data observed in other developing countries - equally discordant from one study to another. It will be seen that, on this point, an *internal*-type analysis is more informative than an international comparison.

- *Pupil management* methods (size of classes, ability groups, repeating) present the same global pattern as in the other developing countries and the industrialized countries. Only achievement is not better (in any stable and significant way) when the classes are smaller or when ability groups are organized. Repeating does not markedly improve the performance of a weak pupil (on which point some qualifications will be provided by internal analysis).

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5. See Appendix on Meta Analysis.



- The findings with regard to *material media* (textbooks, TV) are strikingly concordant with the data provided by Fuller. In the developing countries, the availability or lack of educational material (particularly *textbooks*) is a very significant achievement factor.<sup>6</sup> In Côte d'Ivoire, the survey covered classes that had adopted instruction by television, and where the written aids were at the time distributed to pupils free of charge. It seems to be expected that this factor would have little impact in such a relatively 'well-equipped' context. This is seen not to be the case, and solely the *malfunctionings* of the logistical back-up (written aids arriving late or in too small numbers, lack of equipment maintenance) explain significant variations in achievement.
- With regard to *educational processes*, the analogies are to be seen as second rather than first-degree since the Ivorian 'composites' only partially match up with the indicators used in other research.<sup>7</sup> The two clearest results concern the significant effect of *feedback* and of a *positive attitude of the teacher* (he considers that the pupils can achieve a good performance, and that that depends mainly on him and the teaching he is going to dispense to them). These two trends tally fairly closely with some of the findings observed for the industrialized countries (See Appendix).

Another source of illumination from international overviews - particularly important for decision-makers in the developing countries - is research on the *effectiveness of investment in education*, with special reference to *cost-effectiveness studies*. These studies focus on the relationship between the cost of an intervention and its effects on achievement (see Appendix).

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6. See, in particular, the study by Heyneman et al. (1981) 'Textbooks and achievement in developing countries: what we know'.

7. This presents an interesting methodological problem. The statistical methods (factor analysis, cluster analysis, often used to establish 'profiles' relating to practices, teaching style, the teachers' own conception of their role, etc.) generally allow of a fine grained qualitative description of the patterns of the education dispensed. The indicators obtained are nevertheless specific to the corpus of the data used and are ill-suited to international comparison or meta-analysis. Inventories of tools could profitably be compiled.

**Table 4. Influence of school quality elements on student achievement (Fuller, 1985)**

| School Quality Indicator                         | Expected Direction of Relationship | Total Number of Analyses | Number of Analyses Confirming Effect | Number of Analyses Reporting No. or Negat. Effect | Confirmation Rate |
|--------------------------------------------------|------------------------------------|--------------------------|--------------------------------------|---------------------------------------------------|-------------------|
| <b>School Expenditures</b>                       |                                    |                          |                                      |                                                   |                   |
| 1. Expenditures per pupil                        | +                                  | 11                       | 6                                    | 5                                                 | 54%               |
| 2. Total school expenditures                     | +                                  | 5                        | 2                                    | 3                                                 | 40%               |
| <b>Specific Material Inputs</b>                  |                                    |                          |                                      |                                                   |                   |
| 3. Class size                                    | -                                  | 21                       | 5                                    | 16                                                | 24%               |
| 4. School size                                   | +                                  | 9                        | 4                                    | 5                                                 | 44%               |
| 5. Instructional materials                       |                                    |                          |                                      |                                                   |                   |
| Texts and reading mater.                         | +                                  | 22                       | 14                                   | 8                                                 | 64%               |
| Desks                                            | +                                  | 3                        | 3                                    | 0                                                 | 100%              |
| 6. Instructional media (radio)                   | +                                  | 3                        | 3                                    | 0                                                 | 100%              |
| 7. School building quality                       | +                                  | 2                        | 2                                    | 0                                                 | 100%              |
| 8. Library size and activity                     | +                                  | 18                       | 15                                   | 3                                                 | 83%               |
| 9. Science laboratories                          | +                                  | 11                       | 4                                    | 7                                                 | 36%               |
| 10. Nutrition and feeding prog.                  | +                                  | 5                        | 5                                    | 0                                                 | 100%              |
| <b>Teacher Quality</b>                           |                                    |                          |                                      |                                                   |                   |
| 11. Teacher's length of schooling                |                                    |                          |                                      |                                                   |                   |
| Total years of teacher's schooling               | +                                  | 25                       | 11                                   | 14                                                | 44%               |
| Years of tertiary & teacher training             | +                                  | 30                       | 21                                   | 9                                                 | 70%               |
| 12. Inservice teacher train.                     | +                                  | 5                        | 4                                    | 1                                                 | 80%               |
| 13. Teacher's length of exper.                   | +                                  | 23                       | 10                                   | 13                                                | 43%               |
| 14. Teacher's verbal profic.                     | +                                  | 2                        | 2                                    | 0                                                 | 100%              |
| 15. Teacher's salary level                       | +                                  | 13                       | 4                                    | 9                                                 | 31%               |
| 16. Teacher's social class background            | +                                  | 10                       | 7                                    | 3                                                 | 70%               |
| 17. School's percent of full-time teachers       | +                                  | 2                        | 1                                    | 1                                                 | 50%               |
| 18. Teacher's punctuality & (low) absenteeism    | +                                  | 2                        | 0                                    | 2                                                 | 0%                |
| <b>Teaching Practices/Classroom Organization</b> |                                    |                          |                                      |                                                   |                   |
| 19. Length of instructional program              | +                                  | 13                       | 11                                   | 2                                                 | 85%               |
| 20. Homework frequency                           | +                                  | 7                        | 5                                    | 0                                                 | 71%               |
| 21. Active learning by stud.                     | +                                  | 2                        | 0                                    | 2                                                 | 0%                |
| 22. Teacher's expectations pupil performance     | +                                  | 3                        | 3                                    | 0                                                 | 100%              |
| 23. Teacher's time spent on class preparation    | +                                  | 5                        | 4                                    | 1                                                 | 80%               |
| <b>School management</b>                         |                                    |                          |                                      |                                                   |                   |
| 24. Quality of principal                         | +                                  | 7                        | 4                                    | 3                                                 | 57%               |
| 25. Multiple shifts of classes each day          | -                                  | 3                        | 1                                    | 2                                                 | 33%               |
| 26. Student boarding                             | +                                  | 4                        | 3                                    | 1                                                 | 75%               |
| 27. Stud. repet. grade                           | +                                  | 5                        | 1                                    | 4                                                 | 20%               |

In Côte d'Ivoire, the 'profit' of television instruction was calculated at grade 3 (where television classes were compared with classes not so equipped but using the same textbooks as TV classes) and grade 4, where the classes receiving instruction by television were compared with classes following a 'traditional' curriculum.

With control for the family background of pupils and their level of participation in class, a positive effect of the television curriculum is to be observed for most of the skills assessed (written and oral French, reading, mathematics). The difference is nevertheless very modest at grade 3 between classes following the new curriculum with or without TV. It is markedly greater at grade 4: as much as 6 per cent of total achievement variance is linked to the factor *TV curriculum versus traditional curriculum*. It seems therefore that the greatest benefit is accounted for by the curriculum (the textbooks, the teacher's guide, the new subject-matter) rather than by the actual use of the television set.

The high cost of the television scheme (approximately \$30 per pupil per annum) is one of the reasons that prompted the Ivorian decision-makers to abolish it in 1981 and to overhaul the curriculum and textbooks. Comparison of the Ivorian data with international findings would have been interesting. The results above show that it might have been preferable to retain the existing written auxiliaries; to reduce production costs by confining broadcasts to the oral language, whose effect on achievement was proving the most substantial; and gradually to convert the system into a radio scheme by overhauling the broadcasts and replacing the ageing stock of TV sets by radio receivers.

### *3.1.3.2 Internal analysis*

The crossing of the variables in Table 3 between themselves and with other variables (particularly certain pupil characteristics) reveals convergences of great interest to decision-makers.

(1) An initial group concerns the establishment of the new curriculum in the country. The composites derived from direct observation confirmed the data on opportunity to learning (OTL): the overhauled curriculum was globally well respected; it was more faithfully observed by teachers regularly receiving the written auxiliaries and the television broadcasts. Correlations negative with age and years of experience, but positive with the type of school attended, were also found: young teachers, more recently trained, had been specifically instructed in the new curriculum and hence respected it better. The effect of the 'training' and 'experience' variables must therefore be examined in this case, in the light of the *particular context of the country and the innovation applied in it*.

One thing very much in evidence was that the style of teacher/pupil interaction (of the root oral type in the traditional schools and with the oldest teachers) had undergone a profound change and in most classes was drawing closer to the 'Socratic dialogue' used in the broadcasts and described in the written auxiliaries designed for the teacher. This 'modernization' of class management practices (generally a long and difficult process) proved surprisingly rapid. It bears out the very dynamic role that can be played by the media (TV, radio, teacher's guide designed as *class management sheets*) as *substitutes or complements* of an initial training of teachers, which is often insufficient in many developing countries.

(2) A second group of particulars, linked up with the first, concerns the 'time-on-task'. It is based on the existing relationship between the composites 'pace of interactions', 'root oral style' and 'written exercises'. In classes where the teacher continued to dispense essentially oral instruction (with the pupils repeating in chorus, or one after the other, the same response), observers recorded a very high number of brief and stereotyped interactions. Achievement was significantly lower than in classes in which the teacher organized slots for written exercises where the pupils worked *individually on their slates or in their exercise books*.

This observation can probably be related to the findings about 'time-on-task' available from research in the industrialized countries.

This interpretation in terms of *effects of the style of teaching on pupil involvement time* is borne out by the significant correlation of these variables with another group of indicators. These are not given in Table 4 since this time the concern is with characteristics of the pupil. At all levels of schooling, and for all criteria, the variables employed to describe an *effective participation of the pupil in the class*<sup>8</sup> 'explained' a very significant portion of the achievement variance (up to 20 per cent of total variance between pupils in French and mathematics in grade 3, and from 7 to 15 per cent for the other grades).

In the generally overcrowded classes of the developing countries,<sup>9</sup> one of the major prerequisites for output quality is probably the possibility given to the pupil of *working personally* rather than just listening and repeating, after twenty other classmates, what the teacher has said. The Ivorian results concerning the style of teaching complete, from this point of view, the evidence provided by other developing countries on the impact of material resources (books, exercise books, benches, pencils, etc.) essential to *individual* work by each pupil.

(3) The third cluster of findings provides an interesting example of the complex interactions that may exist between *curriculum, teaching practices* and *pupil background* in the developing countries. It concerns the relationship observed in Côte d'Ivoire between linguistic background, the medium of instruction, the curriculum and grade repeating, particularly in grade 1.

The medium of instruction in Côte d'Ivoire was French, starting in grade 1. One important and hotly debated innovation of the television curriculum was at that time a phase described as *oral impregnation* covering the first six months of grade 1, intended to speed up learning of the first rudiments of French.

Pupils (particularly those from rural areas) who arrived at school speaking only their mother tongue would thus be more quickly enabled to understand their teacher and participate in

8. Three variables were involved:

- the teacher regards the pupil as 'active';
- pupils say that they 'often put up their hand in class';
- pupils say that 'when they do not understand, they ask the teacher'.

The effect of these variables was measured while controlling for home background, age and (in grade 1) cognitive development on school entrance.

9. At the time of the surveys, class size averaged about 47 pupils in Côte d'Ivoire.



the class. A second objective of the impregnation phase was to offset the lack of pre-school education in Côte d'Ivoire with exercises of cognitive and sensorimotor development.

The theoretical soundness of this approach (whose practical implementation has been virtually annulled by strong resistance from teachers and parents alike),<sup>10</sup> was borned out by various findings of the survey in grade 1. The level of cognitive development of pupils (measured by means of non-verbal Piagetian tests three months after the start of schooling) and the fact of knowing a little French (via the family or, in urban areas, from the environment) constituted a considerable asset: 13 per cent of variance in the mathematics test done at the end of the year, 20 per cent in the written French tests and 25 per cent in the oral language tests were explained by these two factors.

The age and grade repeating variables functioned, in such a context, as 'substitutes'. For pupils starting school without the cognitive and/or linguistic prerequisites enjoyed by some of their classmates, repeating was a positive measure enabling a start to be made on learning, the second year, under significantly better conditions. At grade 1 therefore (*and only at that grade*), repeating was a 'suppressive' variable whose zero-order correlation with achievement was positive, and it only took the usual negative direction when controlled by linguistic and cognitive 'prerequisite' measures.

Other results concerning out-of-school familiarity with the language of instruction deserve mention here since a great many developing countries use, for all or part of their education system, an instructional language that is not the children's mother tongue.

At all levels of primary education in Côte d'Ivoire, the home background of the pupil made its impact *essentially through this language factor*. In grades 3 and 4, for example, an 'Exchanges in French' scale was constructed, pupils being asked to enumerate the persons in their family or neighbourhood *with whom they spoke French*. This was by far the best predictor of the block of home variables (5 to 10 per cent of variance explained by this variable alone). The score on this scale was further correlated positively with active behaviour in class (raising the hand, asking questions); and it proved to be significantly linked to the sex and the number of brothers and sisters.

Older brothers and sisters are a key component of the home background of the Ivorian pupil. It is with those of them who have been to school that he or she will most often have occasion to speak French;<sup>11</sup> it is also very often one of them who gives a hand with the

10. We shall be discussing the reasons for these difficulties later (section on the political feasibility of reforms likely to improve the quality of education in the developing countries).

11. It is in the kinship group and, beyond that, in the peer group that French becomes disseminated as a 'language of use' outside the school, as can be seen from the replies to the 'exchanges in French' scale. Pupils speak French with:

- their father: 14 per cent; - their mother: 7 per cent;
- other adults: 16 per cent; - brothers and sisters: 64 per cent;
- other children in the 'concession': 35 per cent.

The hiatus between adults and the young is obvious and illustrates the cultural rift that accompanies the mass extension of education in a country where 60 to 70 per cent of pupils are first-generation school children.

homework.<sup>12</sup> In Côte d'Ivoire and other developing countries, the *size of the family* does not therefore display the negative correlation observed in the industrialized countries (where large family size often corresponds to low SES).

The educational achievement of girls was, in accordance with a pattern common to the developing countries, significantly lower in Côte d'Ivoire than that of boys. This inferiority was partly due to the fact that girls were less familiar with French-speakers. They participated in the activities of their family's 'women's group', where French is used only exceptionally. They spoke up significantly less often in class for this reason, and for other cultural reasons since it is considered 'unseemly' for a girl to call attention to herself by speaking up or asking questions (Grisay, 1984).

The language factor is, in Côte d'Ivoire and many other countries, one of the main features of differentiation between *urban schools and rural schools*. Because they constitute the most modern growth point of society, and also because the multi-ethnicity of the population prompts the use of a foreign language as the lingua franca, the major Ivorian urban centres have a much higher proportion of children using French out of school (all social classes taken together).

It is noteworthy that, in various other respects, schooling conditions seemed *less good in the ivorian towns* (classes more overcrowded, more teacher absenteeism, high proportion of destructured families, more uncertainty about the midday meal, less regular homework). Nevertheless the language advantage of town children apparently more than outweighs these drawbacks: academic achievement was slightly (but significantly) higher in urban areas.

The choices of the authorities regarding media of instruction in the developing countries are far from being dictated by purely educational considerations. They are governed by economic, political, ethnic, religious and other constraints or stakes. The strictly educational importance of this factor for output quality and its implications for equality of educational opportunity suggest, however, that a mobilizing of resources to alleviate difficulties of access of a substantial sector of the population to the medium of instruction has every chance of paying off.<sup>13</sup>

\* \* \*

12. Relatively good results were observed, among grade 6 pupils, in a test worded: 'Here is an exercise written by your younger brother. Correct all his mistakes'. The practices of tutoring of younger by older pupils (of which the side effect is already proving significant in Western research) would no doubt deserve special attention in the developing countries.

13. The Ivorian data confirm, in this connection, the positive effect of the distance media (5 to 7 per cent variance explained by the presence of TV for achievement in oral and written French). They are less clear on the verbal skills of teachers, which are nonetheless relatively consistent both in other developing countries and in studies on foreign languages in the industrialized countries. In the IEA survey on French as a foreign language, Carroll (1975) observes an advance equivalent to one year's schooling for pupils with a teacher claiming to 'speak French like a native'.

Input-output research, in the industrialized and developing countries alike, points to apparently 'trivial' lines of emphasis as key factors of output quality. Pupils perform better when:

- (a) they possess the necessary prerequisites to undertake the learning contemplated;
- (b) they have the opportunity to learn (i.e. the implemented curriculum *actually contains* the knowledge and know-how to be acquired);
- (c) they have enough time (in particular, enough time for *real involvement* in the requisite tasks);
- (d) their material environment (books at home in the industrialized countries; books, exercise books, benches, etc., in the developing countries) provides them with the necessary auxiliaries and stimulations;
- (e) their parents and/or teacher sustain their motivation by making it clear that good academic results are expected of them and that they are considered capable of such achievement.

Translating these lines of emphasis into an actual improvement policy is a much less trivial procedure. Studies conducted along input-output lines seem mainly enlightening in what they say of the ineffectiveness of some specific measures (reducing class size does not significantly increase involvement time or hence achievement; improving teacher training does not always guarantee that the curriculum and time will be better exploited) and of the relatively well attested effectiveness of a number of other steps, the best-assured being, in the developing countries, those concerning material aids (see Caillods and Postlethwaite 1989).

We have tried to show that it is essential to process the scant indicators provided by the regressions equations in a particular country (at the risk of decision-makers managing symptoms rather than realities). This is done by setting the results obtained against evidence from published material; but it also involves an effort of clarification specific to the country's educational context and social background.

### 3.2 Contribution of research on innovation

This family of studies is mainly useful (as already mentioned) in providing an awareness of the difficulty of introducing improvements, however timely they may appear.

Of all the pitfalls awaiting innovators, the *illusion of consensus* is no doubt the most frequent. Having analysed a situation *rationaly* and identified the problems preventing the system from functioning optimally (or at least satisfactorily), innovators undertake *rational* action to remedy the situation. They too often forget, in the heat of the moment, that such a complex system as that of formal education embraces almost as many 'rationalities' as actors.

There is no guarantee in that case that the *objectives* pursued by the innovator are widely shared; or that the *improvement measures contemplated* are compatible with the welfare (or aspirations, views, cultural habits, etc.) of the parties concerned; or that the *methods of operation* do not undergo some particular twist (e.g. to 'adapt to circumstances', to serve tacit interests, or



not to do others a disservice); or finally that *daily wear and tear* will not ultimately get the better of the innovation introduced.

We shall first illustrate this general idea with a series of examples concerning the *schooling strategies of families*. We shall then deal more briefly with some other aspects whose conflictual character seems to be a singularly constant feature in the developing countries, which explains their 'critical' factor role regarding the fate of many innovations.

### 3.2.1 *Schooling strategies*

One of the important objectives of most education systems is usually that of ensuring an even distribution and quality of educational service. This objective is itself linked to a concern with *equity* (equality of opportunity for all a country's citizens) and with avoiding the wastage of human talents inevitably brought about by disparities in access to or quality of education. In practice, however, and even where a political consensus exists on this point, implementation is often made difficult, in particular by the attitude of families, whose behaviour as regards schooling frequently has the effect of maintaining the cleavages and differentiations that one is trying to reduce, or even of fostering additional discrepancies.

Geographical 'pockets' marked by the *reluctance of rural families* to forgo the aid of children on the land (and hence by lower enrolment and higher drop-out rates) subsist in many developing countries. As shown by Bray (1981) in his study on the universalization of primary education programme in Nigeria, an intensive policy of school building in disadvantaged areas does not always suffice to overcome the impression, in such population sectors, that 'schooling is not very useful'.<sup>14</sup>

Other types of differentiation are linked, on the contrary, to *stiff competition among families* for places in school, particularly at the secondary level. The provisions made by the authorities to ensure a distribution on merit of educational resources (still too scarce to be universalized at this level) do not always stand fast against such pressures.

Alongside our own study on primary education in Côte d'Ivoire, we gathered information on a sample of 528 pupils completing grade 6 and sitting the difficult competitive entrance examination for secondary education (Grisay, unpublished). The correlation ( $r$ ) between SES and achievement is only .12. Success or failure in the examination should not therefore be greatly

14. Particularly since this opinion remains relatively justified when enrolment is not accompanied by the creation of a substantial number of jobs for primary graduates. Bray takes some politicians, in charge of Nigeria's reform, severely to task for having dangled largely unrealistic hopes of advancement before rural populations. That brought about an initial influx of pupils and, later, bitter disappointment and a huge rise in drop-out rates. The author nevertheless considers that the policy of providing schools in rural communities should be continued until a psychological threshold has been crossed: 'If an initial threshold can be passed whereby children with no schooling are a minority and therefore unfavourably placed in the labour market, enrolment rates are likely to rise again.' Noting that in the developing countries, increased educational demand tends to follow (rather than precede) geographically uneven economic development, Foster (1977) concludes for his part that "attempts to force the pace of educational expansion prematurely at the expense of the development of other aspects of a society's infrastructure will not, in the short run, contribute either to development narrowly conceived in economic terms or indeed to greater equality".



affected by the home background. Yet the (r) is .40 between SES and *actual entrance* into secondary education! This apparently contradictory result is to be explained by:

- greater *perseverance* on the part of well-to-do families: their children do grade 6 twice or three times in the event of failure and sit the examination again, while poorer families take their children away from school in such cases;
- enrolment in *private* (fee-paying) secondary education not involving an entrance examination (14 per cent of the sample);
- in state schools some pupils enter via other channels than the official assignment via competitive examination.

Noteworthy in this connection is the coexistence of private and state education in many developing countries, which fosters:

- sometimes perpetuation of cleavages inherited from colonial times; Currie (in Heyneman and Currie 1979) shows the lasting influence on secondary education practices in Uganda of the private Protestant and Catholic denominational schools (the former originally taking in children mainly from leading families and the latter from rural areas);
- sometimes the *emergence of selection* linked (in particular) to income; studying a sample of 9,000 grade 1 pupils in the state schools of Rio de Janeiro, Carvalho (1987) records practically no pupil with a father in a profession since well-to-do families send their children only to private schools.

One of the most interesting studies, for the methodological suggestions it contains in particular is that of Lindsey (1978) on the influence of the traditional castes (and of various other socio-economic, ethnic, cultural and religious determinants) on the schooling practices of families in Bombay.

The author describes, with exemplary rigour, the extremely complex relationship that may exist, in a major urban centre in India, between:

- (a) the 'traditional' structures of society;
- (b) the 'modern' social structures that are gradually superimposed on them;
- (c) an education system itself complex (with state education, private subsidized, private non-subsidized); schools also differ on a denominational basis and in regard to the medium of instruction used - Marathi, Gujarati, Hindi, Urdu or English.

The author shows that the decisions taken by families (to send or not send their children, particularly daughters, to school; to send them to a particular type of school; whether or not to take them away from school in the event of failure, etc.) are largely determined by two sets of variables:

- *ascriptive variables* (religion, caste, mother tongue), which reflect the position occupied by the family in the traditional social system.

• *achieved variables* (level of education, income, number of languages spoken and, in particular, knowledge or not of English) situating the family rather in relation to the 'modern' social system, which, without replacing traditional caste structures, has become established alongside and partially interlinked with them.

Analyses of this type clearly show the inadequacy of the SES indicators habitually used in Western studies (socio-economic status of the head of the household, income, parents' level of education, cultural resources of the family).

In the industrialized countries, home background indicators form a relatively consistent cluster. For most of these variables are significantly intercorrelated: pupils whose parents rank low in SES terms are also, more often than the others, children of immigrants; they have fewer books at home; they read less; their parents are less ambitious for them; and so on. Each of these characteristics therefore contribute to measuring, beyond its actual 'signification', one and the same underlying and more complex reality. The measurement error present in each of them is thus partially attenuated. This *de facto* convergence creates the relative unidimensionality of the SES effects observed in the industrialized countries; and it therefore enables a statistical model like regression to 'function' just about satisfactorily there.

The situation is not the same in the highly multidimensional societies encountered in the developing countries and, in particular, in the major urban centres of those states (which play a 'beacon' role for the rest of the country, and in which the highest proportion of those attending school is often concentrated). The variables which in Lindsay's study seem relevant for describing behaviour in regard to formal education on the part of Indian families all prove resolutely nominal, and function as such.<sup>15</sup>

In such a context, the author states, "... the application of only one statistical model, usually multiple regression based on the normal distribution, with all of the assumptions entailed thereby... can only be described as mindless empiricism" (ibid, p. 96). His own approach is *non-correlational* (the statistical model used is close to chi square), which has the advantage of avoiding the far too restrictive technical assumptions of the habitual models, and of respecting the nature of the described phenomena much better. It indeed proves to be particularly suitable for highlighting the full complexity of the existing relationship between Indian society and its education system.

Beyond these technical or methodological implications, it is probably the very conception of the determinants of family motivation that deserves to be reviewed. It would seem a bit presumptuous to affirm that parents' expectations of the education system are globally higher in the developing countries than in the industrialized world on the grounds of a greater economic return (Heyneman 1986). On the one hand, the 'educational capital' distributed by the school does seem, in these societies, to be the subject of expectations (including of quality) more complex than suspected (Foster 1977).<sup>16</sup> On the other, according to the same author, the relation

15. Including variables that are as a rule metrical, such as the income or level of education of parents, for which Lindsay observes substantial threshold effects (the 'critical' levels are, for income, the threshold of 400 rupees; for education, the break between primary and secondary).

16. 'Emergent patterns in social differentiation in the less developed world represent a complex interweaving between traditional and emergent conceptions of status, but it is precisely this issue

between the country's level of development, the economic returns that individuals may expect of the education received and their previous social status seem to be 'cyclical' rather than linear, with suppressive phenomena coming into play when as yet inadequate economic development is accompanied by a plethora of graduates (ibid. p. 277).

Reflection on the equity of education (or, more modestly, on adaptation of the system to the users' needs) therefore faces the priority requirement, as we see it, of an extension of educational sociology studies in the developing countries.

### **3.2.2 Some other contextual factors often critical for the future of innovations**

#### *3.2.2.1. Medium of instruction*

We shall only come back to this issue briefly since it has been referred to several times earlier. Many developing countries, particularly in Africa, are multilingual states where it is impossible to provide education for each ethnic group in its mother tongue (if only for reasons of feasibility since many of these languages do not yet possess a standard written transcription and/or are limited in use). The practical constraints (avoiding the exorbitant cost of instructional aids in x different languages) are often compounded by the concern of the authorities to *strengthen national unity* by promoting the learning, by all citizens, of a language common to all. For basic education the choice goes, as the case may be, to a national language (sometimes more than one) or to a foreign language inherited from colonial times. In secondary education the latter solution is most common.

In one or the other case, it is practically impossible to avoid a situation in which the medium of instruction chosen *makes for discrimination*: education in a national language gives the ethnic group or groups whose mother tongue it is an advantage over the others; the foreign language favours the urbanized social groups (or those close for whatever reason to the places where the language is used), at the expense of rural areas.

As we have seen in Part I, language of instruction is a highly conflictual issue in which the most minor decision is liable to unleash waves of popular feeling, cultural resistance and political controversy. Of countless examples we shall give but two:

-- The beneficial effect of initial education in the mother tongue on learning to read now seems fully borne out for the sub-Saharan countries. Where such education was traditionally dispensed in a Western language (as in the case of most former French-speaking colonies), the introduction of a *period of literacy instruction in a national language* has often been contemplated. But both parents and teachers have often resisted such innovations.

-- The prestige enjoyed by French and English as media of instruction *giving access to writing* sometimes constitutes an obstacle to innovations intended to improve their acquisition. For example, the *structural-global methods* introduced in Senegal and Côte d'Ivoire in the 1965-1975 decade were ill-received by teachers and the general public alike. Drawing as they did

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that is ignored in most contemporary work on education and status transmission' (Foster 1977, p. 219).

on the progress of studies on the teaching of foreign languages, these methods placed great emphasis on *oral* work in the belief that its bases should be firmly laid before the pupil went on to written exercises. The reform of the Ivorian curriculum thus resulted in a redistribution of learning time, with the introduction of a solely oral 'impregnation phase' in grade 1 and, in the other grades, substantial periods of instruction in the oral language as *distinct* from the customary reading and writing lessons.

But, in the eyes of a population for which, as a colourful Ivorianism may be rendered, the school is chiefly where you learn to 'do paper', it was culturally inconceivable that children should not be tracing out their letters from the very first day in class.

The renewal of French teaching with emphasis on oral work and, in the Côte d'Ivoire, the TV media backing it were accused of bringing about a catastrophic decline in spelling standards and a general lowering of academic achievement. Taken up by the teachers, whose habits the new methods upset, the movement of public opinion ultimately swept away the reform (in the case of the Côte d'Ivoire, engulfed in the demise of the television scheme).

### *3.2.2.2. Rural-urban migration and work-oriented curricula*

As it happens, one of the most patent misunderstandings between decision-makers and users of educational services in the developing countries is over 'curricula geared to the rural world' designed to curb the drift from the countryside (with school farms, priority for skills that are functionally useful in rural areas, and so on).

For many rural families, on the other hand, the educational 'investment' does not really seem worthwhile unless at least one of the enrolled children manages to land up in a well-paid urban job.

It is not surprising then that the 'rural curriculum' component of many reform plans is one of those whose success is almost always mitigated, or which becomes blunted after a few years.

One of the best-known attempts in this field is the *education for self-reliance* (ESR) plan designed in Tanzania as indissociable from universal primary education (UPE). Under it each primary school was to engage its pupils actively in productive work, with the dual purpose of seeing that the schools paid their way and teaching the pupils skills that would be of direct use in their working lives.

On completion of the survey covering a sample of Tanzanian schools, Mosha (1988) can but issue a harsh verdict:

*ESR projects in all schools surveyed failed to apply scientific knowledge or skills. Hence, model projects which the rest of the community could emulate had not been developed. The majority of pupils showed more desire to be selected for secondary education than to join in life in the community."*

*"Schools were also far from being self-reliant. On average, each pupil produced goods and services worth Tshs.61 (=US\$0.15) after a full year's hard toil. One wonders whether it would not be more practical to ask parents to pay this amount and save pupils*



*from such drudgery, thus allowing them to spend their time more usefully on other school activities, so long as output is small and there is no useful learning associated with manual work when it is carried out by primitive, conventional means." (p. 24)*

In other countries, even the political will to engage in such projects seems more apparent than real. In Nigeria, notes Bray (1981), "Not only has there been little demand for vocational training and overall reform; there has been little official attempt to supply it. On paper there have been several significant innovations, but with limited real impact". (p. 109)

Likewise in Niger, the 'rural curriculum' that was to be promoted by the television system tested in the country was one of the factors in the rapid marginalization of the experiment. As noted ruthlessly but very rightly by Bray (1981), "When the élite advocate vocational expansion, it is often for other people's children rather than for their own... the attitude of those actively seeking academic education will only change when the rewards from vocational training improve relative to those from academic education". (ibid, p. 109)

### 3.2.2.3 The secondary entrance bottleneck

The virtual impossibility of gaining public acceptance of a primary curriculum designed to culminate in working life for the majority of pupils makes the problem of the *primary leaving certificate, and the examination for its award*, as acute as it is. In countless developing countries, this examination is both the symbol of a primary school incapable of reconciling two functions (giving everyone a basic education, shaping a few for the pursuit of secondary studies) and the concrete mechanism liable to envenom any initiative to provide a better balance between these two goals, (Göttelmann 1989).

The secondary entrance examinations used are therefore, for the educational authorities of many developing countries, one of the most constant sources of concern. The decision-makers are dismayed at the poor quality of the often stereotyped substance of the tests, which encourage cramming and thwart any attempt to make the curriculum more functional; and public opinion becomes indignant at frequent cases of cheating or corruption. Reforming the examination system therefore constitutes a strong political temptation for decision-makers, but also an obstacle-strewn path presenting serious risks for unwary innovators.<sup>17</sup>

The secondary entrance bottleneck is, more broadly speaking, a determining factor in the future of any (or almost any) innovation concerning basic education.

This is often true in the case of:

- *Curriculum reforms.* These frequently make it necessary to organize a *different examination* so that pupils who have followed the new course do not fail a still traditional test. The 'new' examination sometimes coexists with the 'old' one, presenting the endless problems that are not hard to imagine. The television curricula (Niger, Côte d'Ivoire, El Salvador), for example, greatly suffered from the doubts entertained among the public about the real worth of graduates of these new types of education.

17. See Part IV, for an account of the relative success of an innovation along these lines undertaken in Kenya.

- *Structural reforms* and, in particular, all those affecting flows run the risk, likewise, of encountering this obstacle. A case in point was the decision to apply automatic promotion in Ivorian primary education, the vicissitudes of which we were able to follow from 1973 to 1981.

In an education system where, according to calculations for the 1971/1972 academic year, the Ivorian state had to bear the cost of 11.5 pupil-years to obtain one primary education graduate, the abolition of repeating was clearly a perfectly justified measure. Its application, however, met with resistance from teachers and parents alike (in whose eyes the weak pupils automatically admitted to the next class looked like victims denied any chance of catching up). Rates of about 15 per cent for 'clandestine' repeating were thus observed throughout primary schooling in the course of our surveys.

The measure was nevertheless effective in that it speeded up flows and considerably reduced drop-out rates. Hence a very real gain in productivity, but a gain that proved calamitous. The throng of pupils seeking admission to secondary education practically doubled in the space of a few years, fuelling public discontent. Furthermore, the job placement difficulties of pupils failing the secondary entrance examination were abruptly aggravated by the fact that the intake completing primary education averaged about two years younger than before.

The wave of discontent thus aroused in families was probably the decisive factor leading to abolition of all the reforms introduced when the television education scheme was adopted in Côte d'Ivoire, including the most qualitatively positive.

#### *3.2.2.4 Qualification of teachers*

The shortage of qualified teachers and the high cost of initial and in-service training have for a long time, in the developing countries, been encouraging 'compensatory'-type experiments, in the belief that well-designed written or audio-visual aids can make up for poor teacher quality.

This point of view was bolstered by revelation of the very favourable cost-effectiveness ratio observed for particular media (textbooks, radio), as against the less sure impact and high cost of recruiting better paid and/or more qualified teachers. Concluding his review of factors likely to improve achievement significantly, Fuller (1985) thus recommends redirecting investment to these factors. Cost savings can, according to the author, be realized by reducing investment in other elements which are not related to achievement, including small class size, classroom laboratories, the paper credentials of teachers, and teacher salary levels.

It may be fitting to recall here that savings on teachers' pay and 'official' level of qualification should not be viewed solely in relation to their direct impact on achievement (which indeed seems low), but with due regard also to the destabilizing side-effects they entail for the system.

As observed by Caillods and Postlethwaite (1989), and Tibi (1989), the *real purchasing power* of teachers has in the past decade dropped very markedly in most developing countries. This situation is accompanied by deep-seated demotivation, a sense of loss of social status and the search for extra work (using up the time that might otherwise have been spent on preparing

lessons, correcting exercises, retraining and the like), or, more radically, desertion of the profession for better-paid employment.

Savings on *qualification*, too, are liable to present numerous problems, particularly of *institutional feasibility*. Noteworthy in this connection are the attempts to *lower the standard of recruitment of teachers* associated with the launching of television education systems in Samoa and Niger. In both cases the monitors engaged (without previous teacher education and trained 'on-the-job') performed entirely satisfactorily. Both cases were, however, marked by phenomena of rejection:

- the 'traditional' teachers reacted very adversely to competition from the new teachers, and their unions made life difficult for those in charge of the project;
- the monitors (initially paid less than the qualified teachers) were quick to draw attention to their acquired skill, which had indeed very soon become comparable if not superior to that of the 'traditional' teachers, when pressing for (and obtaining) the same pay as those with the paper credentials.

However, it is becoming more and more evident, that the 'classical' way of recruiting and training teachers -- through conventional long courses at teacher training colleges -- cannot alone solve the problems currently faced by the educational systems of many developing countries. Interesting attempts to find an alternative strategy have been made in for instance Tanzania and Zimbabwe

These training schemes, combining on-the-job training with training sessions in educational institutions, correspondance studies and listening to radio programmes were launched to fill the enormous ranks created by the expansion in primary education. These experiences proved quite promising from the point of view of cost-effectiveness (Chivore 1982, Mählick and Temu 1989).

\* \* \*

The conclusions drawn by McAnany (1980) from a broad assessment of pilot schemes for new technologies in the developing countries can, we believe, be extended to all studies on innovation in the Third World:

*First, that we recognize all criteria to be based on an implicit or explicit set of values. As a consequence of choosing a set of criteria, the focus of attention in assessing outcomes will be restricted and exclude considerations of other possible costs and benefits. Second, that in the past we have judged too much by internal efficiency standards and not given sufficient attention to the longer range implications of educating people with technology. Third, that we have not yet paid sufficient attention to intervening contextual factors that both greatly affect short- and long-term outcomes and overshadow the effects of national planning and organizational efforts. (p. 59)*

However demoralizing it may appear, an *inventory of contextual constraints faced by initiatives to improve the quality of education* is just as badly needed as the outline inventory of promising factors supplied today by input-output research. That 'meta-analysis' remains to be done.

### 3.3. Contribution of school effectiveness research

As already stated, this research family is mostly represented by studies conducted in the industrialized countries. Some excellent overviews are provided by Good and Brophy (1986) and by Creemers and Scheerens (1989). In relation to the previous two 'families', the major worth of these studies is that they set out less to identify *quality factors* than to examine the functioning of *significant units* (classes and, above all, schools) identified as 'effective' or largely 'ineffective'.

The methods used are often expensive (case studies, direct observation, interviewing) but have the merit of allowing a much more integrated approach than in the previous instances. What the studies reveal are closely interlinked *profiles* or *clusters* of variables reflecting, in the efficient educational 'sites', the coexistence of an atmosphere, an organizational style and educational processes that are mutually consistent, directed towards clearly defined goals and shared by the various 'actors'.

It is interesting to note that a great many factors identified as determinants in experimental or input-output research are confirmed (time-on-task, homework, positive expectations of teachers, corrective feedback, etc.), as are specific 'negative' results (low impact of class size or of the physical features of the environment; inconclusive results of organization into 'ability groups', etc.).

But the most enlightening contribution of school effectiveness research concerns the institutional and contextual conditions in which these various 'ingredients' actually become operational:

- '*strong*' authority of the school principal, capable of exercising real leadership in the institution, and of not confining himself/herself to a purely administrative role;
- a *common ethos*, both cordial and demanding; staff and pupils feel 'proud' of their school and, at the same time, 'responsible' for a success they consider possible;
- real *consistency* (clear and coherent objectives; clear rules; explicit feedback, consistent with objectives);
- sound *time management* (time-on-task of pupils, but also time of consultation between teachers);
- an *administrative management* avoiding irksome administrative overloading for teachers, and leaving pupils a certain margin of responsibility;
- a *careful evaluation* of the outputs obtained, for the purpose of regulating the education dispensed.



Some good results have been recorded in activities which, based on these results, were targeted on underperforming institutions with an effort to bring about improvements (Clark and McCarthy, 1983; McCormack-Larkin, 1985).

The few studies available for the developing countries generally bear out these results. For instance, a positive relationship is found between the *atmosphere of the school* and the cognitive outputs of pupils (with control for initial characteristics) in a study conducted in Nigeria (Olaniyi, 1985). The beneficial effect on performance of a *dynamic management style* is confirmed by Kaewdung (1977) and by Bhothong (1984) in two studies on primary schools in Thailand.

As stated by Creemers and Scheerens (1989), such results call for a slightly less summary theoretical modelling than the classical production function of input-output research. On the basis of the many 'points of coherence' revealed by literature deriving from the various research trends mentioned earlier, the authors outline an interpretation grid that is of interest on account of the bridges it provides between previously ill-connected approaches. The model they offer is *multi-level* (the pupil, the class, the school, the out-of-school context):

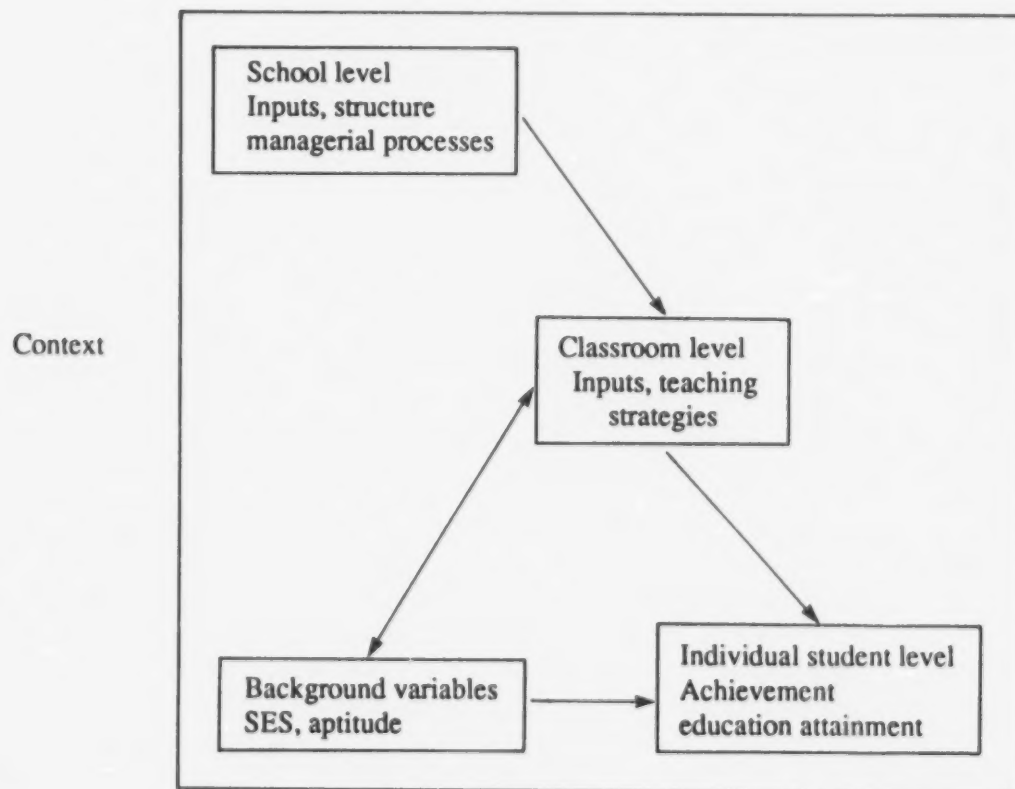


Figure 1. A contextual, multi-level model of school effectiveness (Creemers and Scheerens 1989).

'The relevant variables at the *student* level seem to be the ones displayed by Carroll (1963). According to this model, as presented by Creemers and Scheerens (ibid 1989), the degree of learning is a function of the amount of time the learner actually spends on the learning task relative to the total amount needed. Time actually spent on the learning task is defined as being equal to the smallest of three variables: (i) opportunity (time allowed for learning); (ii) perseverance (the time the learner is willing to engage actively in learning); (iii) aptitude (the amount of time needed to master the task under ideal conditions, increased by whatever amount is necessary because of reduced quality of instruction and lack of ability to understand less than optimal instruction).

The variables shown in literature to maximize the opportunity to learn of the pupil are then relevant at *class level*. Effective teachers would be those who:

- (a) give structure to the learning experience;
- (b) proceed in small steps but at a rapid pace;
- (c) give detailed and more redundant instructions and explanations;
- (d) have a high frequency of questions and offer active practice;
- (e) provide feedback and corrections, particularly in initial stages of learning new material;
- (f) try for a success rate of 80 per cent or higher in the initial learning;
- (g) divide seatwork assignments into smaller segments or devise ways to provide frequent monitoring;
- (h) provide for continuing student practice (overlearning) so that they have a success rate of 90 to 100 per cent and become rapid, confident and firm.

What are consequently relevant at *school level* are the variables permitting the application, at *class level*, of these processes conducive to learning that are revealed in literature on school effectiveness.

Creemers and Scheerens (1989) show that what has been identified in empirical studies as significant characteristics of 'effective schools - in contrast to non-effective schools - reflect concepts firmly rooted in control theory, cybernetics, and rational management theory: "*an important managerial condition is the provision of evaluative facilities throughout the school, regulations for frequent assessment of student progress, tracking systems, computerized test-service systems, absenteeism registration, procedures for school based review and teacher assessment.*" (ibid, p. 702).

A further point is that the *out-of-school context* exerts an influence at each level. The impact of family background on pupil achievement is the best-studied aspect; but the authors also emphasize cultural, structural, administrative and other conditions that may strengthen school management (or render it inoperative). For on the basis of organization theory, Creemers and Scheerens (1989) show that productivity (in terms of pupil achievement) is only one of the potential objectives of a school. The survival of the establishment (in countries subject to population shrinkage), the securing of additional resources, adaptation to the demands of outside authorities, staff cohesion and other considerations may weigh just as heavily. Only some are compatible with effective classroom practice.

The authors observe, above all, that a conceptualization of school effectiveness drawing on organization theory leads almost necessarily to discarding the hypothesis of a sole, 'ideal' type of 'effective' school. This idea, which is still nevertheless very much present in literature, is inconsistent with the growing evidence that an organizational structure is effective only in relation to a given situation or context (contingency theory). It is probably responsible for the inadequate attention so far given to *differential phenomena* regarding effectiveness (e.g. the fact that some school profiles are more favourable for particular categories of pupils, or for particular educational levels or for particular types of education than for others), or to the *stability of effects in time* (an effective 'profile' in a given context may cease to be effective if the context changes).

For Scheerens and Creemer, who in this respect adhere to a position defended by Bronfenbrenner, (1986), it is in the linkages between the various levels that the causal keys regarding effectiveness must be sought. This point of view, which in these authors (and incidentally in Bronfenbrenner) enjoys an essentially methodological status, has considerable planning implications.

The findings of research on school effectiveness contrast with many previous findings on account of their, as it were, 'immediate allure' for decision-makers. It is observed that one important consequence of the results achieved by this research trend is the greater attention now given, in the reflection on the *qualitative monitoring tools* for education systems conducted by several industrialized countries, to indicators relating to school performance, the style of management and the school climate.

This sometimes results in questionable initiatives. There can be no certainty, for instance, that 'brutal' measures (such as publishing in each district a list of 'effective' or 'underperforming' schools to induce improvement in the latter) are truly helpful. "Rewarding" the good performers financially and 'punishing' the poor performers (as at present contemplated in some industrialized countries) verges on absurdity.

Denouncing the potential ill effects of such 'accountability systems', Kemmis et al. (1988) plead rather for the introduction of *flexible monitoring systems* giving pride of place to decentralized management of information. As they see it, the main task of the central authority should be to provide the *districts* and *schools* with the impulsion, motivation towards improvement and necessary tools and resources for them to conduct their own self-evaluations and introduce local improvement schemes (see Part IV).

## Part IV

### Information and mechanisms for quality improvement



## 4.1 Introduction

This Part will dwell on some mechanisms and tools to provide information for quality improvement in education, especially at the *classroom* and *school* levels. The issues at stake and accordingly the information needed on quantitative and qualitative development differ according to the level under consideration. The potential of an approach that considers the specific information needs for decisions about quality of education at distinct administrative levels - from the teacher to the central planner in the Ministry of Education - has been demonstrated by Ross and Postlethwaite (1988) and been further elaborated in Ross and Mählick (1990). Some of the ideas and examples provided in what follows have been inspired by these works.

An improvement in the collection, the processing and the communication of information may contribute to better quality of education, provided the information collected, processed or received by each of the "agents" is really *the information that he needs to guide his decisions*, at his operational level.

## 4.2 On what aspects are more and better information most needed?

At all organizational levels, the information likely to generate the most significant improvements is probably a more clear description of: *the objectives* pursued (what knowledge and know-how should the pupils master? at what level of expertise?), of the *results* obtained (have the various objectives been mastered?), and of the distribution of these results with respect to *time* (have the objectives been mastered better or worse than previously?) and with respect to the *population* (who has and who has not mastered them?). Knowing where one is supposed to go tomorrow and where one is today is surely essential information for anyone who is meant to move (or push someone else) along the path of progress, whatever kind of progress it may be.

Information pertaining to *means and processes* to be applied has a more ambiguous status. Rather than seeking (or receiving) *objective information* about the various options available, and their respective usefulness for the pursuit of his objectives, the teachers or other actors attribute or are forced to attribute to them a prescriptive value that limits their decisions more than it supports them. The information contained in *school curricula* is both insufficient when it comes to objectives, and perhaps too constraining when it comes to processes. They generally contain lists of topics to be taught, together with numerous didactic prescriptions (on the order to be followed, the methods to be used, etc.). It is exceptional:

- (a) for them to specify, in an operational way with the teachers in mind, the *optimal (or minimal) standard of competence* to which the pupils should be brought; nor do they set out by what type of behaviour this competence manifests itself;

- (b) for them to have been submitted to any *empirical verification of the relevance of the means proposed* (or rather imposed). Methodological choices are often the fruit of the "experience" and the "commonsense" of those responsible for the programme, and of their sensitivity to the pedagogical fashion of the day.

The *report card* given to the pupil and his parents is not much more explicit. It almost never provides a detailed diagnosis of objectives that have and have not been mastered. Moreover, the "methodological" advice and guidance appearing on the report card generally does not sin on the side of operational relevance ("work more", "chat less"). Within the class, the pupil is more frequently informed about *what he must do* (open the book to this page, do that exercise) than about *the teacher's expectations in terms of objectives to be achieved* (to be able to apply this reasoning, to succeed in solving that set of exercises).

The administrative and pedagogical tasks carried out by *inspectors* tend to turn them primarily into verifiers of implemented content and processes (formal keeping to the programme). For lack of sufficiently systematic tools, the control exercised by the inspectorate over the actual pursuit and achievement of objectives in the schools of each district results more in informal assessments ("impressionistic" reports) than in *effective* information that could be accumulated, compared with other sources, and processed to give a sense of temporal trends.

At the central level, astonishingly, the necessary attention is not always paid to information about objectives pursued or to be pursued: it is rare for *needs assessments* to make it possible to specify in an operational way the (necessarily general) policy orientations that were adopted; hence their reflection in the curriculum may leave something to be desired. Also the extremely valuable information about results that could be provided by *national examinations* (where they exist) is very often under-utilised, sometimes because there is a dearth of the expertise needed to process these data effectively, and often because the tests are poorly designed, and consequently unusable as an objective measure of the system's outputs.

On the other hand, the central or regional authorities often have a very substantial amount of information, which they need for the planning and budgetary management of the system, about populations, flows and resources (equipment in particular) being used. It is not obvious that the *contextual* role that this information could have for other 'agents' (making it possible for a given geographical zone or school to compare its results with those of zones or schools educating populations *of the same type* with resources *of the same scope*) is well perceived and facilitated.

In the following discussion, we first analyse several experiences on a large or medium scale, designed so as to make it possible, *through the provision of information*, to induce qualitative improvements at various levels of the system, and especially at the level "where things are really happening", that is, in the *schools and classrooms*. We will then try to see how such tools can be harmonised with a more decentralised approach ("school projects" or "district projects").

### 4.3 Using information to foster qualitative improvements: some issues and experiences

Some countries still lack a genuine, professionally equipped *curriculum development centre*, to carry out the various tasks that specialists consider necessary in this field:

- identifying educational needs;
- operationally translating them into curricula;
- developing the necessary means (written material, audiovisual or computer resources, teacher re-training tools, etc.);
- empirically verifying the quality of new curricula (pilot experiments, surveys of users, etc.), and making the necessary adjustments;
- supporting implementation on a large scale;
- evaluating the outcomes (improvement of the academic achievement, impact on social and emotional attitudes and development, absence of undesired side effects, etc.).

We temporarily set aside the important problem of the dearth of *needs assessments* in developing countries, to concentrate on some *feedback* mechanisms of potential usefulness to those responsible for Third World school systems.

#### 4.3.1 Questionnaires on opportunity-to-learn

Various experiences demonstrate the usefulness of *questionnaires addressed to teachers* as a way of obtaining information about the *curriculum actually in place* in the country, about its relevance, and even about the level of mastery achieved by pupils. The relatively low cost of this type of mechanism makes it particularly attractive to developing countries.

In his study of literacy classes (grade 1) in Rio de Janeiro, Carvalho (1987) submitted about fifteen exercises, selected for their "revealing" nature (they correspond to several distinct teaching methods and to different levels of mastery), to a sample of 800 teachers. The teachers were asked to indicate, for each exercise, whether they had used ones like it in their class, and at what time in the school year. The results (controlled by direct observation in about thirty classrooms) show that this technique allows for fairly accurate assessment of the actual implementation of the method recommended by the new curriculum; moreover, they bring to light significant differences, from one teacher to another, in *rate of progress*: some still set the most elementary decoding exercises at the end of the year, while others require that simple texts be read after three months. Carvalho's survey is a good example of an "economic" tool (relatively abundant information is obtained without recourse to pupil testing, which is always expensive).

The surveys of the International Association for the Evaluation of Educational Achievement (IEA) usually include *opportunity-to-learn* questionnaires, whereby the teacher is asked to indicate whether his pupils did or did not have the *possibility of acquiring* the knowledge and know-how required by each of the questions on the international test administered to them. These instruments turn out to be extremely useful for revealing specificities of and/or possible gaps in national curricula. The "out-of-date" or "too formal" character of certain science or mathematics curricula, for example, is clearly highlighted by a

comparison with what is being done in countries where teaching is more "modern" or more "functional"(see for instance: Comber and Keeves 1973).

The IEA's work has shown that this technique is effective even for subjects whose curriculum is viewed as particularly difficult to "pin down", such as the teaching of literature. Literature professors from different participating countries were presented with a series of twenty literary analysis questions; they were asked to indicate *which of the points they most frequently asked their pupils to develop in their analyses of texts*. The patterns of teacher responses turned out to be very consistent with those of their pupils (to whom a literary text was presented, together with the same list; they were asked not to write out a text analysis as such, but to state *which of the points they would develop if they were to analyse the text*). The "profiles" drawn of both teachers and pupils reveal some very interesting differences from country to country, in terms not only of "cultural sensitivity" to literary texts, but also of actual pedagogical practices (Purves 1973).

#### 4.3.2 Criterion-referenced tests

Applied at the *national* level and combined with a *criterion-referenced measure of achievement*<sup>1</sup>, Opportunity-to-learn questionnaires allow for detailed exploration of the match between *the curriculum desired by the authorities, the curriculum actually implemented in classrooms, and resulting outputs*.

During the pedagogical assessment of Côte d'Ivoire's educational television curriculum, this approach was adopted for each of the objectives of the existing programme, with criterion-referenced tests designed and administered to pupils; at the same time, the teachers were asked to indicate, for each of the test exercises: a) whether they ever had occasion to set exercises of the same type before their pupils; b) how many of their pupils could, in their opinion, solve the exercise.

A *desirability* effect manifests itself to some extent in the answers, especially those to question a). However, this can be controlled with appropriate techniques. With just this reservation, the results paint a fairly faithful picture of those aspects of the programme that "came across well" in practice, those that were neglected, and those about which errors or misunderstandings occurred in the teaching processes.

Direct observations in the classroom, as well as scores obtained by pupils on different objectives, almost always confirm the information provided by teachers, *at least in relative terms* (a given objective is taught *more* than some other one). *Absolute* frequencies (a given objective is taught by x% of teachers) turn out to be less reliable.

1. Contrary to 'Norm-referenced' testing (currently the dominating testing procedure) which aims at comparing and ranking pupils or examinees usually for selection purposes, the "*criterion-referenced*" tests are constructed, to permit the interpretation of examinee test performance in relation to a set of well-defined competencies. In relation to the competencies, there are three common uses for criterion-referenced test scores: (a) to describe examinee performance, (b) to assign examinees to mastery states (e.g., "masters" and "nonmasters"), and (c) to describe the performance of specified groups of examinees in program evaluation studies. (Popham 1978).



Information collected this way, combined with information flowing from testing (pointing out objectives that are really badly mastered by pupils), has had a genuine impact on the process of re-drafting written material used in Côte d'Ivoire. Many of the changes made in manuals and teacher's guides were directly inspired by the survey results. This is not always the case: on many occasions, expensive evaluations have been carried out, without the results being reflected in curriculum modifications. In Côte d'Ivoire's case, the favourable factors seem to have been:

- the fact that it was a *central curriculum*, the same for all the schools in the country; *recently introduced* (and hence still viewed as modifiable); and managed by a team with which the survey's authors were able to *establish communication relatively easily*;
- the fact that the evaluation *closely followed the national curriculum*: Opportunity-to-Learn measures and achievement scores (together with, in some cases, direct observations) were collected for *each* of the objectives pursued or subject matter components being taught.

On this point, the criterion-referenced approach is greatly superior to the normative tests generally used in surveys. It turns out to be very sensitive to gaps in a curriculum: numerous errors in ordered progression, shortcomings of blocks for revision, and even misunderstandings by teachers of specific chapters or paragraphs of the textbook are brought to light with impressive precision.

The major disadvantage of a criterion-referenced test is that it is *cumbersome* and therefore costly: several thousand questions were necessary in Côte d'Ivoire to cover the three subjects under evaluation. The same is true in the USA of the criterion-referenced tests used in the *National Assessment of Educational Progress*.

Nevertheless, it does seem possible to use less heavy information collecting campaigns without compromising too severely the reliability of the results. The "dry runs" regularly carried out in Côte d'Ivoire (to check the quality of tests before the testing campaign as such) encompassed randomly selected judgement samples of twenty schools. The results obtained with these small samples turn out to be quite close to those yielded by the representative sample survey (a margin of error of 5 per cent to 10 per cent for correct answer rates by objective). Such error intervals seem to be acceptable for most of the needs filled by these surveys.

Another possible streamlining would consist in applying to achievement surveys the "revealing exercises" technique used for Opportunity-to-learn by Carvalho (1987): criterion-referenced testing would be applied only to *a few* particularly significant skills, in order to assess a given essential aspect of the curriculum.

#### 4.3.3 *Information which can influence the implemented curriculum: an experience involving the use of national examinations*

The national examinations organised by most developing countries to select candidates at the end of primary or secondary schooling must, without any doubt, be considered a potential (and relatively inexpensive) source of information about pupils'

acquisitions. Furthermore, there is no longer any need to demonstrate the great impact that the way in which the selection examination is designed can have on the curriculum<sup>2</sup>: the proof is in some sense automatic through the *backwash effect* observed systematically in the class preceding the examination, and even earlier. As underscored by Somerset (1982):

"... in the schools, examinations are never neglected. For the last two years leading up to any selection examination, the effective curriculum of the class is defined not by the official syllabus or the official textbooks, nor by what the teachers were taught during their last in-service course; but by the content of the most recent selection examination papers. Badly set examinations can thus sabotage the most dedicated efforts to improve education through curriculum reform and similar means". (p. 16)

Analysing the contents of a series of secondary entrance examinations offered in various Anglophone African countries the author notes that their quality is in fact poor. In fact, the examinations encouraged pupils' rote recall rather than their creativity and thwarted attempts to use more imaginative teaching methods. We have been able to observe an identical situation with secondary entrance examinations in Côte d'Ivoire and in Senegal.

Somerset's merit (1982 and 1988) consists in having shown that one can use the power of the backwash effect to *positive ends*. The reform of Kenya's *Primary Leaving Examination*, in which the author played an important role, consisted in modifying the content and the taxonomic level of questions, in such a way as to induce teachers to change the curriculum actually being taught. In so far as *content* is concerned, the reform effort centred on achieving a better balance between the academic function of the examination (verifying mastery of school knowledge useful for the secondary level) and its function as a certificate that is ensuring that the majority of pupils, who leave school at this point, possess the minimal indispensable skills in the areas of health, home economics, environmental protection, the use of weights, measures and currency, etc. Insofar as the *taxonomic level* is concerned, priority was given to questions based on *understanding* (relations between facts, causes and consequences, etc.), *application* of knowledge to new situations, and *problem solving*.

At the same time, a *feed-back system* was instituted, with a view to encouraging teachers effectively to modify their practice. The information supplied was of two types:

- Communication of average scores (by school and by district), making it possible for institutions to see where they stood with respect to other schools in the same district, and for districts to compare themselves with other districts (*incentive information*);
- Analytic comments on the results from certain poorly answered questions, accompanied by concrete advice to teachers (*guidance information*).

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2. And also on many other characteristics of the system, as shown by Göttelmann in her synthesis on "*Examinations and the management of education*" (IIEP, 1989).

An analysis of examination results recorded during the six years following the reform show a definite impact, albeit a disconcerting one at first glance. The gap between districts obtaining the best and the poorest outputs (as well as the dispersion among schools within the same district) at first *increased* substantially. In fact, the most effective districts and/or schools *were faster than the others to modify their practice* in adaptation to the new examination, which momentarily gave them an additional advantage. However, the emotion generated by "free fall" rankings (commented by the press in not so complimentary terms) soon forced the other districts to react as well, and the gaps gradually narrowed. Some particularly disadvantaged rural districts even managed to climb into the top few places, thanks to a sustained effort by the authorities, the teaching staff and parents' associations.

In his conclusions, Somerset stresses the need to *provide support* for innovations of this type. The simple carrot and stick of a ranking is not enough: the process can only bear fruit if intelligent guidance makes it possible for the agents concerned to understand how they must orient their efforts in order to improve their results.

It is interesting to note that the *mailing* used in the Kenyan experience has most of the characteristics that may be considered effective for having a practical impact:

- the information provided *pertains to concrete outputs* (and these are outputs of crucial importance in the eyes of teachers, pupils and parents);
- the *meaning* of these results is carefully explained, both by comparison with those obtained by others and *with reference to the objectives pursued*: for example, errors are analysed from this point of view;
- this interpretation naturally leads to *practical advice* (skills to be developed, sequences to be implemented, types of exercises to be set), whose relevance for the objective being pursued is *visible in concrete terms*.
- teachers and pupils can hope for a *direct "return"* on the effort they put in: the next examination will show if progress was made.

However, altering national examinations remains an extremely delicate operation, given the massive stakes involved.

#### 4.3.4 *Information can influence the evaluation practices in schools: an experience involving teacher-made assessments*

Teacher-made tests, used to verify pupil's achievement at the end of the school year (and often, when there is no automatic promotion, to decide about admission to a higher class) can also provide information about the curriculum actually being taught, and constitute a powerful means of intervention.

In this respect, we describe an experience which, although originating from an industrialised country, may be of some interest for certain developing countries, where promotions *from grade to grade* are the responsibility of the school, and where inequalities

are observed from one school to another, in terms of both qualitative requirements and indicators like promotions and repetition rates.

A study encompassing fifty public schools in French-speaking Belgium (Grisay 1988) shows that end-of-year examinations organised by teachers all through primary school differ from one another considerably, both in their unequal levels of difficulty and in their unequal "coverage" of the official programme. When one compares the marks given by teachers (and their decisions regarding repetition) with the results of a standardised external test, one observes that, at the same level of competence, the educational fate of the pupil is very much determined by the class he attends: almost 30 per cent of the variance (in so far as marks are concerned) and almost 60 per cent (in so far as repetition is concerned) are explained by the unequal severity of evaluation at the local level.

An analysis of the contents of samples of examination papers set by teachers is particularly revealing for those who draw up the curriculum. One observes, in particular, the existence of a massive *backwash effect*, in that almost all the examinations contain questions pertaining to *the next year's programme* (which many teachers consider themselves obligated to anticipate, in order to prepare "properly" their "good" pupils, and thereby giving up on ensuring that the weakest will have acquired at least the basics of the current year's programme).

Moreover, this analysis is very illuminating about the *way teachers interpret the objectives* and about the *curriculum actually pursued*. The priority given to formal memorisation of isolated facts, at the expense of cognitive skills at the highest cognitive level, is as patent in this case as in the case, deplored above, of national examinations in developing countries. By way of example, the roughly 800 exercises studied in the sample of grade 3 mother tongue examinations broke down into:

- 92 per cent grammar, spelling and other "formal drills",
- 5 per cent reading comprehension tests,
- 3 per cent written expression tests,
- 0 per cent oral comprehension exercises.

The intervention (conducted mainly as a mailing exercise, but also including several pedagogical days with inspectors and researchers as moderators) consisted in confronting each teacher with the "mirror" of information collected about his class and about all classes of the same grade.

On the one hand, the teacher received a confidential analysis of his own practice: How does my class compare with the others? Am I more demanding than my colleagues, or less? What would have happened, *elsewhere*, to the pupils I kept back for another year? etc.

On the other hand, the teacher was invited to react to a document containing the examination questions that he himself and the other teachers in the sample had used in the same grade to evaluate each of the programme's objectives, by answering the following: which of these questions is at a *reasonable* level of difficulty?



It should be noted:

First, that *one third* of the exercises set in these examinations were deemed "inadequate" by more than 70 per cent of the teachers, even though they themselves had designed and used these exercises.

Second, that the questions assessed as "reasonable" were so deemed virtually unanimously.

It was therefore possible to distribute new documents, setting out sample questions at a more appropriate level of difficulty, and covering the programme objectives more completely.

The most direct consequence of this action was a significant reduction in the percentages of repetition and children behind at school (the latter declined by about 8 per cent, that is, almost one quarter of those behind before the intervention). Changes in practical approaches (contents with less inequality of difficulty level, better "coverage" of objectives of the functional type) were observed. It is interesting to note that, here again, a backwash effect occurred: *even before* the planning of the intervention reached their level, grades 5 and 6 teachers, alerted by their colleagues from lower grades, started to introduce questions on habitually neglected skills in their examinations (and, it is to be hoped, *in their teaching*).

It is perhaps not unrealistic to imagine that, in some developing countries, medium-scale data collection and interventions of this type could be directed by regional authorities or by inspectors, and probably with the technical support of a national or regional research centre.

#### 4.3.5 *Information which can improve classroom processes: experiences involving introduction of a feedback corrective system (Mastery Learning)*

As opposed to the two preceding mechanisms, based on a feedback to the teacher of information collected by other bodies, the problem posed here is that of better management of the information collected by the teacher himself in his class, and communicated by him to his pupils.

- **Malaysia**

The work done by Nordin (1980) in ten rural classes in Malaysia is probably still one of the most brilliant experimental studies conducted in a developing country on teaching processes likely to improve quality. This study constitutes part of the vast body of research co-ordinated by B. Bloom, on the "Two sigma problem" (Bloom 1984). As is well known, the Chicago team set itself the objective of designing collective teaching conditions that would make it possible for the majority of pupils to reach, in *anormal class*, the same (very high) level of ability that they reach when entrusted to a competent tutor.

Nordin split up the 10 classes (matched from the point of view of the pupils' initial aptitudes) into a control group and 4 experimental groups, all consisting of 2 classes each.

The same subject material (three chapters of the mathematics syllabus) was taught to them through a series of seven lessons. The teaching in the control classes was of the direct traditional type. The teachers of the four experimental groups applied the following modalities (for which special training was organised):

- Group 1: Reinforcement of cues and explanations provided to the pupils;
- Group 2: Reinforcement of participation (the teacher interacting with more pupils);
- Group 3: Combination of 1 and 2 (indicators and participation);
- Group 4: Institution of corrective feedback, followed by remedial learning.

The four experimental groups obtained scores significantly superior to those of the control group, on each of the established criteria (post-test cognitive achievement, interest in the subject matter, effective time on learning tasks). On all the criteria, group 4 (corrective feedback) achieved scores significantly superior to those produced by using the other three modalities. According to the author, "Although no cost-effectiveness study was carried out, there was a strong indication that the feedback corrective procedure was the most effective and required the least investment in training of teachers and the production of instructional materials" (ibid, pp. 198-199).

The improvement obtained experimentally by the introduction of a feedback corrective system is generally massive (an average size-effect of about one sigma for the set of studies comparable to that of Nordin).

#### • Korea

The application *on a large scale* of innovations inspired by mastery learning seems to be feasible, as shown by Korea's secondary school development plan (Shin Se-Ko 1984), in which a vast curriculum reform was combined with the institution of a mastery learning system, carefully studied in order to adapt it to local conditions (in particular, large and heterogeneous classes). This campaign (which in 1980 encompassed no fewer than 20,000 classes, or more than one third of the country's schools) had very positive effects insofar as achievement is concerned. On average, across the five evaluations conducted with the inclusion of control classes, the proportion of pupils achieving mastery of the material was 22 per cent higher in the mastery learning classes than in "conventional" classes. Encouraging progress was also recorded in the following respects:

- mastery of higher cognitive processes, of working methods and of expression skills;
- pupil self-concept and interest in the topic;
- declining absenteeism;
- a reduction of inequalities.

Obviously, the Korean campaign required a substantial investment: development and dissemination of the new curriculum, re-training of thousands of teachers, the support of a distance teaching system, etc.

## • Côte d'Ivoire

Less spectacular, but nevertheless very meaningful progress was made on a large scale intervention in Côte d'Ivoire by the implementation of a simple *analytic feedback system*, i.e. a system that is not accompanied by the systematic remedial learning mechanism that is usually required (Delhaxhe 1981).

Two of the "by-products" of the criterion-referenced test administered in Côte d'Ivoire were the development of a bank of diagnostic items pertaining to the various programme objectives, and the training of about a hundred local pedagogical counsellors in the administration and the correction of pedagogical tests. Some additional training was organised for these counsellors, in order to bring them to the point of being able, on the basis of existing tools, themselves to create new *formative tests* applicable in class at the end of each "chapter" or learning sequence. Each of them then became responsible for four teachers in the same district. Bimonthly evaluations were organised in co-operation with the teacher; the counsellor was asked, together with the teacher, to analyse the weak points revealed every two weeks, and to envisage what should be done to strengthen them.

This campaign, which lasted three years, involved several hundred classes throughout the country, for different subjects and at different school levels. On six occasions, comparisons were drawn between small groups of "experimental" classes (about fifty in total) and "control" classes, matched on the basis of a pre-test. All these comparisons showed significant differences in favour of the "experimental" classes, in which the "gain" from pre-test to post-test was often three to four times greater than that observed in the "control" classes.

The Delhaxhe study has the merit of not glossing over the various material and institutional hurdles that the campaign ran up against:

- difficulties with paper supply;
- shortage of reproduction equipment (photocopiers, alcohol stencil machines, etc.);
- the reticence of some inspectors in the face of the enhanced role played by their subordinates, (all in all, however, the inspectors reacted to this initiative rather well);
- the heavy additional work load required of the pedagogical counsellors and the teachers of the classes involved;
- the refusal of the authorities (justified, but naturally not welcomed by those concerned) to provide additional remuneration for the pedagogical counsellors participating in the campaign;
- the random nature of remedial actions (left to the initiative of the teacher);
- the conflict between the rigidity of the television programme and the need, which soon became apparent, to introduce revision blocks.

In the final analysis, however, it was a political constraint that put an end to this innovation (the termination of the television programme swept away all the initiatives that had sprung up around it). This result is an argument in favour of a certain degree of discretion of such mechanisms.

#### **4.4 Designing the qualitative monitoring of the system: a trend towards decentralised mechanisms.**

We have already mentioned in Part III the emergence in industrialised countries of a very fertile research trend that treats the *school* as the key unit for the study of qualitative factors influencing learning, as well as the new impetus given by this trend to reflection about what shape an effective mechanism for *monitoring* the educational system might take.

In the view of Kemmis *et al.* (1988), the main characteristics of such a mechanism should be as follows:

- *extreme prudence in the aggregation and analysis of data*: the calculation of *averages* (at the level of the class, the school, the district, the country) must not mask internal variations; moreover, it is indispensable to clarify these types of results by relating them to their contextual *determining factors* i.e. to analyze what "explains" between-school differences in educational achievement (the characteristics of the students they receive - ability, home background -, the material and financial resources they dispose of and so on);
- *a high degree of responsibility left to teachers, principals and local authorities* in the evaluation of their own effectiveness (as opposed to centralised control, which encourages respect for the letter rather than the spirit of directives);
- *the development of meta-evaluation tools*: in this case, the role of central authorities would be to evaluate the self-evaluation made at the local level (after having provided the schools with data, self-evaluation tools, the assistance of experts, etc.).

On the basis of a series of experiments presently being conducted in Australia ("Disadvantaged school program", "School improvement plan", "Participation and equity program"), the authors recommend a mechanism at three levels:

*The central authorities* annually define a *small number of national priorities* concerning, for example, improvement of the time-on-task, or greater equality between boys and girls, etc. Each of the country's schools is required to produce a report on what was done in the course of the year to improve these aspects, on the results achieved, and on the instruments used to evaluate these results (a list of tools may be proposed by the authorities).

In addition, *the schools* define their own *specific priorities* (curriculum areas in which an improvement is desired). This "school project" should be set up for a certain period (for example, the time required for one cohort of pupils to move through the cycle from start to finish); a short annual report would tell the community and the authorities about the objectives being pursued, the resources deployed and the evaluation carried out.

Finally, *groups of schools* (from the *same region* or encountering the *same problems*) would negotiate several *common priorities*, for which a collective effort would be made. Regular meetings would allow for co-ordination of these initiatives, and for exchange of



information and tools developed individually. The results achieved would be described in the annual report that the schools are required to provide to central or regional authorities. Under these circumstances, the role of the central monitoring service is to ensure that these self-evaluation activities are actually put in place, and to provide them with assistance as needed.

In the authors' view, this proposed decentralisation is in no way incompatible with *orientation and evaluation managed at the national level*. As they see it, the main tasks on which the central services should concentrate would be: (a) definition of national priorities on which the schools would have to provide evidence of their efforts to improve and (b) development, for the country as a whole, of practical approaches likely to promote better control of certain key aspects.

The success achieved in Australia with various "improvement programmes", inspired by this model, seems to confirm its ability *effectively to mobilise the energy of different educational agents*, with respect to *common general objectives*, but for which *local re-definition and responsibility* are encouraged (choice of specific priorities as a function of the local context, search for solutions, evaluation of results achieved).

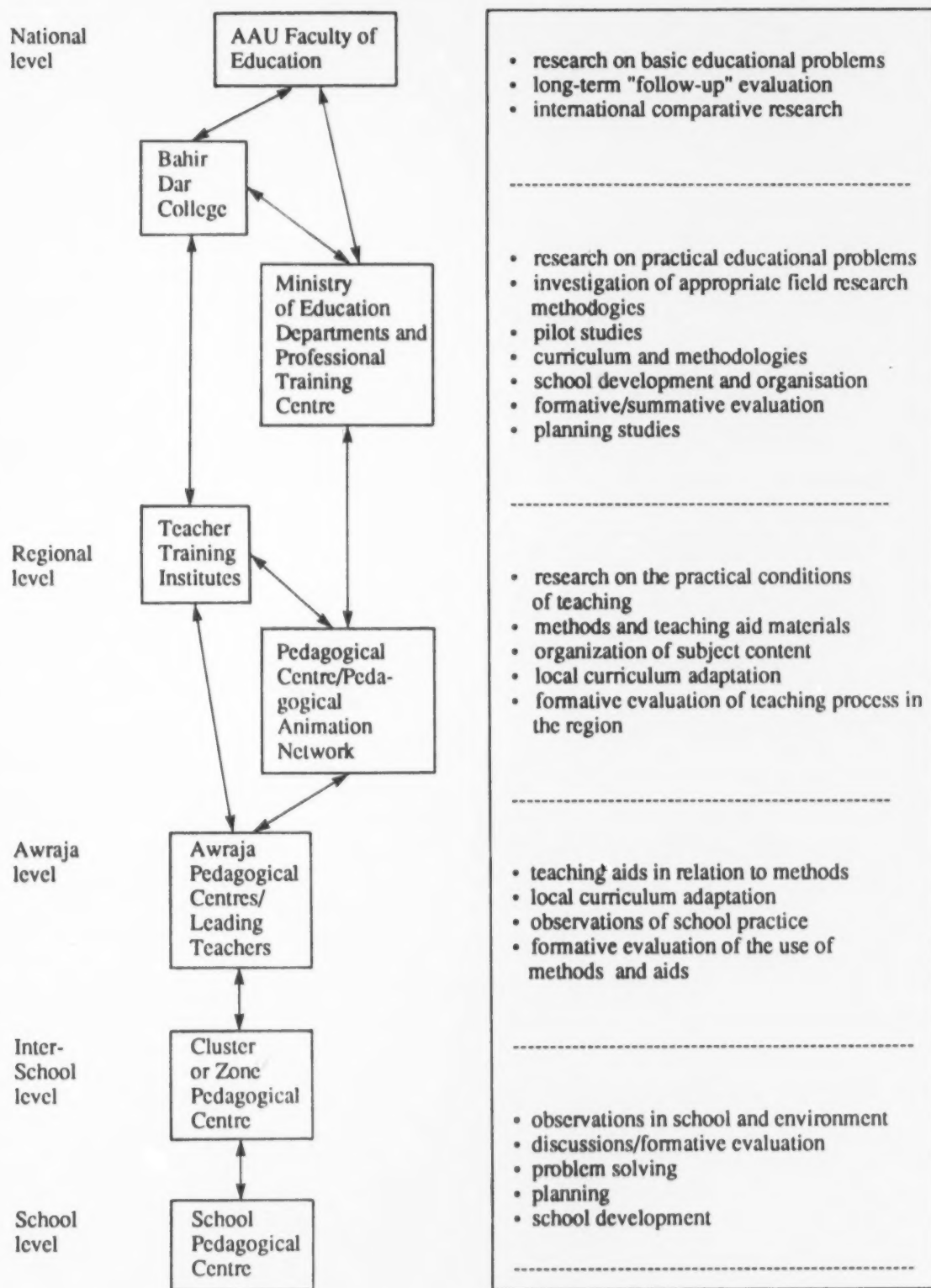
Also the International School Improvement Project (ISIP) of the OECD (Van Velzen et al. 1985) offers interesting cases of how school leaders and teachers can engage in designing and implementing school improvement strategies. Some of these are similar to the approaches discussed by Purkey and Smith (1983). The ISIP project describes six overlapping types of strategies that have been used in, for instance, Germany, Netherlands, Sweden, Switzerland, the United States and other industrialized countries. The strategies encompass capacity-building, knowledge utilization, competence development, facilitating locally-generated improvements, mandating and networking (Van Velzen et al 1985).

With their attractive proposed balance between monitoring by the central authorities and autonomy of action for field agents, are those school improvement strategies conveniently "transferable" to Third World countries?

One of the initiatives that is closest in spirit is the *Self-Help Action Plan for Education* (SHAPE), recently undertaken by Zambia (Coombe 1988). The objective of this plan is to enhance the capacity of schools and colleges for self-help in professional and material terms through the development of resource centres, school-based teachers' centres and of production in agriculture, industrial arts and home economics. (Zambia 1987). (see Figure 3).

The structure put in place is similar to the one described by the same author in an earlier paper, pertaining to Ethiopia (Odin and Coombe 1986). As shown in the Figure 2, an important role is attributed to various bodies able to provide schools with support that is both conceptual (training, guidance) and logistical (equipment development, information management, documentation resources): the *faculties* of education sciences of the country's universities, the *teacher's colleges*, together with whatever *regional pedagogical centres* may exist, constitute the operational hinges of the system.

**Figure 2. Ethiopia: a model for the organization of educational research**



One of the cornerstones of such a mechanism is, in fact, the development of new skills at the *intermediate levels* of the organisation. The roles of various agents - professors at teacher's colleges, superintendents, school principals, etc. - can and must be enriched with a number of functions, connected with the analysis of local problems, the management of information, the support of innovations and the evaluation of results. We use the words *can* and *must* advisedly. As pointed out by Coombe (1988), a certain degree of scepticism is sometimes advanced regarding initiatives that aim to transform these individuals into agents of progress; for inspectors and teacher's college professors in some developing countries are often considered to be "bastions of conservatism".

Our own experience with the corrective feedback mechanism in Côte d'Ivoire ran up against the same initial scepticism regarding the important role attributed to the country's pedagogical counsellors. In fact, the predicted "resistance" turned out to be much more easily surmountable than one might expect. For the great majority of these agents, a mechanism *that provides them with a better professional grasp of the realities of the school* is perceived as an enhancement, and is therefore generally well received.

From this point of view, Zambia's SHAPE experience is very much a "feasibility test", as suggested by the authors. Other initiatives inspired by the same principles should probably be tried in different national contexts, in order to explore this avenue. As far as the *quality* of education is concerned, it does in fact seem necessary to seek out conditions promoting some *capillarity of improvement efforts*: it does not seem very likely that top-down initiatives, managed solely by the central authority, can be as effective for quality as they have been for *quantity*.

In our view, a "flexible" mechanism, such as the one proposed by the Australian authors Kemmis et al. would represent, in this light, a *global umbrella structure* that could house and effectively support at least some of the sub-mechanisms described in the preceding sections of this chapter: Opportunity-to-Learn surveys, interventions centering on national examinations or internal certification, the corrective feedback system, school projects.

## Appendix



# Appendix

## Meta-analyses of factors influencing cognitive achievement

Development of the techniques of *meta-analysis of research findings in education* has been a big step forward for researchers in these last fifteen years. The number of publications on education is constantly growing,<sup>1</sup> and it is becoming essential to command tools enabling this information to be organized.

The most common method long in use (illustrated in Part II of this document by Fuller's (1985) table on quality of education in the developing countries) is simple *counting*. An inventory is drawn up of studies on a given factor, such as the effectiveness of television instruction. From among these studies, those are picked that contain a rigorous comparison - e.g. the results of TV classes ("the experimental group") are compared with those of the control group - and the statistical significance of these differences is provided. The outcome of the analysis is a table of percentages as follows:

- percentages of cases where the experimental group achieves results significantly better than those of the control group;
- percentages of cases where the control group fares better,
- percentages of cases where the differences observed are not significative.

This technique is not very powerful. In particular, when the influence of a factor is real but *slight*, its effect is liable to be underestimated.

Glass (1976) was the first to suggest carrying out *statistical* analyses in order to *integrate* the quantitative results of a large number of studies on one and the same subject. It was he who proposed the name of *meta-analyses* for these techniques.

A meta-analyses is distinguished from the traditional "literature reviews" by the following features (cf. Kulik and Kulik, (1989) pp. 228-229):

1. A meta-analysis covers review results. It encompasses results found in *objective* searches of a research literature.
2. A meta-analysis is an application of statistical tools to summary statistics, not raw data. The meta-analyst's observations are means, standard deviations, and results from statistical tests. An analysis of raw scores is a primary analysis or secondary analysis; it is not a meta-analysis.
3. A meta-analysis covers a large number of studies. Reviews that cover only a handful of studies may be mini-analyses; they are not meta-analyses.
4. A meta-analysis focuses on size of treatment effects, not just statistical significance. Reviews that do not base their conclusion on effect sizes and relationship strengths differ in a critical way from Glass's meta-analytic reviews.
5. A meta-analysis focuses on relations between study features and outcomes. The meta-analyst's goal is not simply to summarize a whole body of literature with a single average effect size or overall significance level. A meta-analyst also tries to determine how study features influence effect sizes.

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1. As Kulik & Kulik point out, in 1988 over 17,000 articles and 9,000 doctoral theses were recorded by the Current Index to Journals in Education and the Comprehensive Dissertation Abstracts.

The most conclusive innovation concerns the utilization of the *effect size* (item 4 above): it permits a more subtle analysis of the information contained in the studies considered under consideration. There are various formulas to calculate the effect size. The one most widely used consists in recording, for each of the studies examined, the differences observed between the experimental and the control group, and dividing the result by the standard deviation of the control group.

This gives an estimation of the importance of the "treatment" expressed in standardized scores<sup>2</sup> which thus is *comparable even if the achievement measures used vary from one study to another*. Table 1 below displays the results of a series of meta-analyses reviewed by Fraser (1987) and which cover different instructional practices.

Table 1. Effects of instructional quality and time on learning (Fraser, 1987)

| Method                        | Effect size | Effect size  |
|-------------------------------|-------------|--------------|
| Instructional quality         |             |              |
| Reinforcement                 | 1.17        | xxxxxxxxxxxx |
| Acceleration                  | 1.00        | xxxxxxxxxxxx |
| Reading training              | 0.97        | xxxxxxxxxxxx |
| Cues and feedback             | 0.97        | xxxxxxxxxxxx |
| Science mastery               | 0.81        | xxxxxxxxxx   |
| Cooperative programs          | 0.76        | xxxxxxxxxx   |
| Reading experiments           | 0.60        | xxxxxx       |
| Personalized instruction      | 0.57        | xxxxxx       |
| Adaptive instruction          | 0.45        | xxxxxx       |
| Tutoring                      | 0.40        | xxxx         |
| Individualized science        | 0.35        | xxxx         |
| Higher-order questions        | 0.34        | xxx          |
| Diagnostic prescription       | 0.33        | xxx          |
| Individualized instruction    | 0.32        | xxx          |
| Individualized mathematics    | 0.32        | xxx          |
| New science curricula         | 0.31        | xxx          |
| Teacher expectations          | 0.28        | xxx          |
| Computer assisted instruction | 0.24        | xx           |
| Sequenced lessons             | 0.24        | xx           |
| Advanced organizers           | 0.23        | xx           |
| New mathematics curricula     | 0.18        | xx           |
| Inquiry biology               | 0.16        | xx           |
| Homogeneous groups            | 0.10        | x            |
| Programmed instruction        | -0.03       | -.           |
| Class size                    | -0.09       | -x.          |
| Mainstreaming                 | -0.12       | -x.          |
| Instructional time            |             |              |
| Time                          | 0.38*       | xxxx         |

Effect size is the difference between group means expressed in standard deviations. The symbol x Represents the effect size in numbers of tenths.

\* This effect size is the correlation between learning and instructional time.

2. A standardized test (Z scores) varies approximately between -3 and +3. A positive size effect indicates that the results achieved by the experimental group are superior to those of the control group; hence a negative size effect means that the control group has obtained a significantly better result than the experimental group. A result close to zero tells us that there is no difference between the two groups.

Table 2. Effects of home, peer, class, and media environment on learning

| Method               | Effect size | Effect size |
|----------------------|-------------|-------------|
| Graded homework      | 0.79        | xxxxxxxx    |
| Class morale         | 0.60        | xxxxxx      |
| Home interventions   | 0.50        | xxxxxx      |
| Home environment     | 0.37        | xxxx        |
| Assigned homework    | 0.28        | xxx         |
| Socioeconomic status | 0.25        | xxx         |
| Peer group           | 0.24        | xx          |
| Television viewing   | -0.05       | -x.         |

Effect size is either a correlation or the difference between groups expressed in standard deviations.  
 x Represents the effect size in number of tenths.

It is generally agreed that an effect size higher than 0.30 or 0.40 should be considered as 'interesting' or 'significant'. Fraser's table contains some fifteen instructional practices where the effect goes beyond this threshold (sometimes substantially beyond) and hence may be considered as promising tracks for improving teaching quality.

## Bibliography

- Ahmed, M. & Carron, G., (1990) The Challenge of basic education for all, *Prospects*. XIX (4), 559-572.
- Andrien, M., *Evaluation pédagogique de l'enseignement primaire de Côte d'Ivoire. Analyse des besoins éducatifs de base*, Université de Liège. 1984.
- Beckers, J.; De Bal, R.; Detheux, M.; Grisay, A.; *Evaluation pédagogique de l'enseignement primaire de Côte d'Ivoire:*  
 (1978) n° 1 - Bilan du rendement au CP1 et au CP2  
 (1980) n° 2 - Bilan du rendement au CE1 et au CE2  
 (1983) n° 3 - Bilan du rendement au CM1 et au CM2,  
 Université de Liège. (Mimeographed documents).
- Beeby, C.E. (Ed.). (1969), *Qualitative aspects of educational planning*, Paris: International Institute for Educational Planning.
- Bhotong, A. (1983). A comparative analysis of elementary school principal's behavior in recognized schools and central schools in Thailand (Doctoral dissertation, University of Missouri-Columbia, 1983). *Dissertation Abstracts International*, 45, 694-A.
- Bloom, B.S. (1972), Mastery learning in J.M. Block, *Mastery Learning: Theory and Practice*. New York: Holt Rinehart and Winston Inc., 47-63.
- Bloom, B.S., (1984). The Two sigma problem: the search for methods of group instruction as effective as one-to-one tutoring. *Educational Researcher* 13. 4-16.
- Bourdieu, P., (1979). *La Distinction: Critique sociale du jugement*, Paris: Editions de Minuit.
- Bray, M., (1981). *Universal primary education in Nigeria: a study of the Kano State*. London: Routledge & Kegan Paul.
- Bronfenbrenner, U., (1986). Recent advances in research on the ecology of development. In Eyferth, K., Silberein, R.K. & Rudinger, G. (Eds.), *Development as action in context*. New York: Springer-Verlag.
- Caillods, F. & Postlethwaite, T.N., (1989). Teaching and learning conditions in developing countries. In Caillods, F. (Ed.), *Prospects for educational planning*. Paris: International Institute for Educational Planning.
- Carrol, J.B., (1963). A model of school learning. *Teachers College Record*, 64, 722-733.
- Carrol, J.B., (1975). *The Teaching of French as a Foreign Language in Eight Countries*, Stockholm: Almqvist & Wiksell.
- Carron, G. & Ta Ngoc, C., (1981). *Reduction of Regional Disparities: the Role of Educational Planning*. Paris: International Institute for Educational Planning.
- Carvalho, M., (1987). *L'apprentissage de la lecture en classe d'alphabétisation à Rio-de-Janeiro*, Thèse de doctorat en Sciences de l'Education, University de Liège. (Mimeographed document).



- Chivore, B.R.S.; Masango, R. B. (1982): *An interim assessment - Report on the effectiveness of the ZINTEC Programme and implications on teacher education in Zimbabwe (September 1982)*. Presented at the workshop on Evaluation of Educational Reforms, organised by the Ministry of Education and Culture, Harare. 5-12 December 1982. (Mimeographed document).
- Clark, T.A. & McCarthy, D.P., (1983). School improvement in New York City; the Evolution of a project. In *Educational Researcher*, 12(4), 17-24.
- Coleman, J.S., (1968). The Concept of Equality of Educational Opportunity. In *Harvard Educational Review*, 38(1), 7-37.
- Coleman, J.S. et al., (1966). *The Equality of educational opportunity*, Washington, D.C.: Government Printing Office.
- Comber, L.C. & Keeves, J.P., (1973). *Science education in nineteen countries*, Stockholm: Almqvist & Wiksell.
- Coombe, T., (1988). *Integral planning for the staffing function in education*, Paper presented at the International Institute for Educational Planning international workshop on the Future of strategic educational planning.
- Coombs, P.H., (1969). Time for a change of strategy. In Beeby, C.E. (Ed.), *Qualitative aspects of educational planning*. Paris: International Institute for Educational Planning, 15-35.
- De Landsheere, G., (1979). *Dictionnaire de l'évaluation et de la recherche en éducation*, Paris: Presses Universitaires de France.
- Delhaxhe, M., (1981). Mise en place d'un système d'évaluation formative en Côte d'Ivoire. In *Evaluation pédagogique de l'enseignement primaire de Côte d'Ivoire*, n° 10. Liège: Université de Liège, Laboratoire de Pédagogie Expérimentale.
- Den Hartog Georgiades, W. et Jones, H.L., (1989). *A review of research on headmaster and school principalship in developing countries*, PHREE Background Paper Series 89/11, May.
- Eicher, J.C. et al., (1980). *L'économie des nouveaux moyens d'enseignement*, Vol. 3, Coût et efficacité: vue d'ensemble et synthèse, Paris: UNESCO.
- Foster, P., (1977). Education and social differentiation in less developed countries. *Comparative Education Review*, June/Oct. 1977, 211-229.
- Foster, P., (1980). Education and social inequality in Sub-Saharan Africa. *The Journal of Modern African Studies*, 18, (2), 201-236.
- Fraser, B.J., et al., (1987). Syntheses of educational productivity research. *International Journal of Educational Research*. 11, (2), 145-252.
- Fraser, B.J., (1989). Research syntheses on school and instructional effectiveness. In Creemers, B.P. & Scheerens, J. (Eds.), *Development in school effectiveness research*. *International Journal of Educational Research*. 13 (7), 707-719.

- Fuller, B., et al. (1983), The organisational content of individual efficacy. *Review of Educational Research*, 51 (4), 509-539.
- Fuller, B., (1985). *Raising school quality in developing countries: What investments boost learning?* World Bank Education and Training Series, Report n° EDT7. Washington: The World Bank.
- Fuller, B., (1986). Is primary school quality eroding in the Third World? *Comparative Education Review*, 30, (4).
- Glass, G.V., McGaw, B., & Smith, M.L. (1981). *Meta analysis in social research*. Beverly Hills, California: Sage.
- Good, T.L. & Brophy, J.E., (1986). School Effects, in: M.C. Wittrock (ed.), *Handbook of Research on Teaching*, New York: McMillan, 1986, 570-601.
- Göttelmann, G., (1989). *Examens et management de l'éducation*. Paris: International Institute for Educational Planning. (Mimeographed document).
- Government of Kenya, *First Development Plan for the period 1964 to 1970*. Nairobi.
- Government of Kenya, *Second Development Plan for the period 1970-1974*.
- Government of Kenya, *Third Development Plan for the period 1974 to 1978*.
- Government of Kenya, *Fourth Development Plan for the period 1979 to 1983*.
- Government of Kenya, *Fifth Development Plan for the period 1984 to 1988*.
- Government of Malaysia, *Second Five-Year Plan for Economic and Social Development 1969-1974*, vol. 1, Kuala Lumpur.
- Government of Malaysia, *Second Malaysia Plan 1971-1975*.
- Government of Malaysia, *Third Malaysia Plan 1976-1980*.
- Government of Malaysia, *Fourth Malaysia Plan 1981-1985*.
- Government of Malaysia, *Fifth Malaysia Plan 1986-1990*.
- Government of Tanzania, *Second Five-Year Plan for Economic and Social Development 1969-1974*, vol. II, Dar-es-Salaam.
- Government of Tanzania, *Third Five-Year Plan for Economic and Social Development 1976-1981*, vol. I.
- Government of Thailand, *Second Plan 1967-1971*. Bangkok.
- Government of Thailand, *Fourth Plan 1977-1981*. Bangkok.
- Government of Thailand, *The Fifth National Economic and Social Development Plan (1982-1986)*, Bangkok: National Economic and Social Development Board.

- Government of Thailand, *The Sixth National Economic and Social Development Plan (1987-1991)*, Bangkok: National Economic and Social Development Board.
- Grisay, A., (1979). Facteurs associés au rendement du CP et au CE en Côte d'Ivoire. In *Evaluation pédagogique de l'enseignement primaire de Côte d'Ivoire*, N° 7. Liège: Université de Liège, Laboratoire de Pédagogie Expérimental.
- Grisay, A., (1984). Analyse des inégalités de rendement liées au sexe de l'élève dans l'enseignement primaire ivoirien in: *International Review of Education*, 30, 25-39.
- Grisay, A., (1988). Améliorer l'évaluation - bilan à l'école primaire in: *Revue de la Direction Générale de l'Organisation des Etudes*, Bruxelles, Oct. 1988, 3-20.
- Hallak, J. (1978). Qualitative Planning: What means, what ends. In Adams, R.S. (ED.), *Educational Planning: towards a qualitative perspective*. Paris: International Institute for Educational Planning.
- Hallak, J. (1990). *Investing in the future: setting educational priorities in the developing world*. Paris: International Institute for Educational Planning and London: Pergamon Press.
- Harbison, R.W. & Hanushek, E.A., (1988). *Educational performance of the poor: lessons from rural northeast Brazil*. Washington: the World Bank.
- Heyneman, S.P., & Loxley, W.A. (1983 a), The Effect of Primary-School Quality on Academic Achievement across Twenty-nine High- and Low-Income Countries, *American Journal of Sociology*, 88, (6), 1162-1194.
- Heyneman, S.P., (1986). Les facteurs de réussite scolaire dans les pays en développement. In M. Crahay & D. Lafontaine, Ed., *L'art et la Science de l'Enseignement*. Brussels: Labor. 303-340.
- Heyneman, S.P., Farrel, J.P. & Sepulveda-Stuardo, M.A., (1981). Textbooks and achievement in developing countries. What we know. *Journal of Curriculum Studies*, 13 (3), 227-246.
- Heyneman, S.P., & Currie, J.K., (1979). *Schooling, academic performance and occupational attainment in a non-industrialized society*, Washington: University Press of America.
- Heyneman, S.P., (1986). Differences between developed and developing countries: Comments on Simon's and Alexander's "Determinants of school achievement", *Economic Development and Cultural Change*, 28 (1), 403-406.
- Heyneman, S.P. & Loxley, W.A. (1983 b), The Distribution of primary school quality within high and low income countries, *Comparative Education Review*, 27 (2), 108-118.
- Heyneman, S.P., (1980). Planning the equality of educational opportunity between regions. In Carron, G. & Ta Ngoc, C. (Eds), *Regional Disparities in Educational Development - A Controversial Issue*, Paris: International Institute for Educational Planning.
- Husén, T., (1972). *Social background and educational career*, Paris: OECD.

- Husén, T., (1975) *Social influences on educational attainment*, Paris: OECD.
- International Bank for Reconstruction and Development/The World Bank, (1988). *Education in Sub-Saharan Africa: Policies for Adjustment, Revitalization and Expansion*, Washington D.C.
- Jencks, C., Smith, M., Ackland, H., Bane, M.J., Cohen, D., Gintis, H., Heynes, B., & Michelson, S., (1972). *Inequality: A reassessment of the effect of family and schooling in America*. New York: Basic Books.
- Kaewdung, R. (1977). Elementary school principal role perception and school effectiveness in Thailand (Doctoral dissertation, State University of New York at Buffalo, 1977). *Dissertation Abstracts International*, 38, 3183-A.
- Kemmis, S.; McTaggart, R.; Smyth, J.; Ross, K., (1988). Monitoring School Performance: Testing and Alternatives to it. *The Australian Administrator*, 9 (2).
- Khellout, A., (1980). L'attitude des ruraux en face de l'école algérienne actuelle, *Psychologia-Educatio*, Université de Constantine, 7, mai 1980, 9-15.
- Kulik, J.A. & Kulik, C.L., (1989). Meta-Analysis in education. *International Journal of Educational Research*, 13, 277-325.
- Lankonde, A. (1988). *The qualitative failure of the African school*. Paper presented at the IIEP international workshop on "The Future of strategic educational planning", Paris 28 November to 2 December 1988.
- Lewin, K., (1985). Quality in question: A new agenda for curriculum reform in developing countries. *Comparative Education*, 21, (2).
- Lindsey, J.K., (1978). Primary education in Bombay: Introduction to a social study, *Evaluation in Education: International Progress*, 2, (1), 3-104.
- Lockheed, M. & Hanushek, E., (1987). *Improving the efficiency of education in developing countries: A review of the evidence*. Washington: The World Bank.
- Lockheed, M.E. & Verspoor, A. (Eds), (1989). *Improving primary education in developing countries: A review of policy options*. Washington: The World Bank.
- Mählick, L.; Temu, E. B. (1989). *Distance versus college trained primary school teachers: a case study from Tanzania*. Paris: International Institute for Educational Planning. IIEP Research Report n° 75
- Mayeske, G.W. et al., (1972). *A Study of our nation's school*, Washington, D.C.: U.S.O.E.
- McAnany, E.G., (1980). Understanding "success" in communication technology: a review of some Third World projects. *The Economics of New Educational Media*, vol. 2: *Cost and Effectiveness*. Paris: Unesco, 48-60.
- Mc Cormack-Larkin, M., (1985). Ingredients of a successful school effectiveness project. *Educational Leadership*, March 1985, 31-37.
- Mialaret, G., (1985). Réflexions personnelles sur la qualité de l'éducation. *Education Comparée*, n° 37, décembre 1985.



- Ministry of Education, Tanzania (1988). *Development of Education: 1986-1988. National Report of the United Republic of Tanzania*, prepared for the 41st session of International Conference on Education. Geneva. Dar-es-Salam: Ministry of Education.
- Ministry of Education, Thailand *Primary education in Thailand*, Bangkok: Office of the National Primary Education Commission, 1987-1988.
- Moegiadi, Mangindaan, C. & Elley, W.B., (1979). Evaluation of achievement in the Indonesian education system. *Evaluation in Education*, 2 (4), 281-351.
- Mortimore, P. et al., (1988). *School Matters: the Junior Years*. Somerset: Open Books.
- Mosha, H.J., (1988). A Reassessment of the indicators of primary education quality in developing countries: Emerging evidence from Tanzania. *International Review of Education*, 34, 17-45.
- Nordin, A.B., (1980). Improving leovarning: an experiment in rural primary schools in Malaysia, *Evaluation in Education*, 4 (2), 143-263.
- Odin B. and Coombe, T. (1986). The Relationship between teaching quality and educational research in Ethiopia. *A Programme for in-service primary teacher education in Ethiopia*. Report of the Task Force on co-ordination of primary teacher up-grading activities and professional support services for teachers. Addis Abeba: Ministry of Education, 71-74.
- Olaniyi, W.O. (1985). Relationship between the role of the principal, school climate, and student achievement in selected secondary schools in Nigeria (Doctoral dissertation, The American University, 1985). *Dissertation Abstracts International*, 46, 1469-A.
- Omari, I.M. & Mosha, H.J., (1987). *The Quality of Primary Education in Tanzania*. Nairobi. (Mimeographed document).
- Organisation for Economic Cooperation and Development, (1989). *Schools and quality*. Paris: OECD.
- Peters, R.S., (1969). The Meaning of Quality in Education. In Beeby, C.E. (Ed.), *Qualitative Aspects of Educational Planning*, Paris: International Institute for Educational Planning.
- Popham, W. J. (1978). *Criterion-Referenced Measurement*. Englewood Cliffs. New Jersey: Prentice Hall.
- Postlethwaite, T.N. & Wiley, D.E. (1991). *Science achievement in twenty-three countries*. Oxford: Pergamon.
- Psacharopoulos, G., (1989). Why educational reforms fail: A comparative analysis. In *International Review of Education*, 35, 179-195.
- Purkey, S.C. & Smith, M.S., (1983). Effective schools a review. *Elementary School Journal*, 83 (4), 427-453.

- Purves, A.C., (1973). *Literature education in ten countries*, Stockholm: Almqvist & Wiksell.
- Ross, K.N. and Mählck, L. (1990) (Eds): *Planning the quality of education: The collection and use of data for informed decision-making*. Paris: International Institute for Educational Planning.
- Ross, K.N. and Postlethwaite, T.N., (1988). Planning the quality of education: different information for different levels of decision-making. In *Prospects*, XVIII, (3) 315-331.
- Scheerens, J., (1989). *Process-indicators of school functioning: a selection based on the research literature on school effectiveness*. Paper presented at the General Assembly of the INES project, CERI/INES 89-06, Sept. 1989. (Mimeographed document).
- Scheerens, J. & Creemers, B.P., (1989). Conceptualizing school effectiveness. In Creemers B.P. & Scheerens, J. (Eds.), *Developments in school effectiveness research. International Journal of Educational Research*. 13 (7), 691-706.
- Somerset, A., (1988). Examinations as an instrument to improve pedagogy. In Heyneman, S.P. & Fägerlind, I. (Eds), *University examinations and standardized testing: principles, experience and policy options*. World Bank Technical Paper n° 78. Washington: The World Bank.
- Somerset, H.C.A., (1982). *Examinations reform: the Kenya experience*. A report prepared for the World Bank, June 1982. (Mimeographed document).
- Thorndike, R.L., (1972). *Reading comprehension education in fifteen countries*. Stockholm: Almqvist & Wiksell.
- Tibi, C. (1989). *Les salaires et les enseignants*. Paris: International Institute for Educational Planning. Mimeographed document.
- Van Velzen, W.G., Miles, M.B., Ekholm, M., Hameyer, U. & Robin, D., (1985). *Making school improvement work - a conceptual guide to practice*. Paris: Organisation for Economic Cooperation and Development.
- Windham, D.M., (1988). Effectiveness indicators in the economic analysis of educational activities. *International Journal of Educational Research*, 12 (6), 575-666.
- Windham, D.M., (1990). The cost of effective schools. In P. Vedder (Eds), *Fundamental studies in educational research*. Amsterdam: Swets and Zeitlinger Publishers.
- Zambia, Republic of, (1987). *Guide: Notes on the implementation of the self-help action plan for education (SHAPE)*. Prepared by the SHAPE Secretariat. Lusaka: Ministry of General Education and Culture/Ministry of Higher Education.

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*Administration and management.*

*Curriculum development and evaluation.*

*Educational technology.*

*Primary, secondary and higher education.*

*Vocational and technical education.*

*Non-formal, out-of-school, adult and rural education.*

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## The International Institute for Educational Planning

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### *Inquiries about the Institute should be addressed to:*

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This review was originally intended: (i) to constitute one of the background documents for the IIEP workshop on 'Issues and practices in planning the quality of education' which took place in November 1989 and (ii) to be used in a more elaborate form as an orientation and training document for IIEP courses and seminars organized on the subject.

The review consists of four different parts. The first, entitled 'Conceptual distinctions in the discourse on the quality of education', is devoted to definitions of the notion of quality of education and some related concepts; it also studies at some length three particularly important issues: (i) expansion and educational standards; (ii) the relevance issue and the evolution of curricula; (iii) quality and equity. The second part, 'Quality of education in some development plans', analyses how the treatment of quality issues has evolved over the years in a few selected developing countries. The core of the document, contained in the third part entitled 'What does research have to say?', reviews a certain number of research studies undertaken in developing countries which focus specifically on (i) the methodology or approaches used and (ii) the findings reported. The fourth part examines the utility and practicability of various information tools for quality improvement and concludes with a discussion on decentralized mechanisms for the monitoring the quality of education.

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